Final
Environmental Impact Report/ Environmental Assessment and Section 4(f) Evaluation

State Route 138 Widening Project From Avenue T to State Route 18 Junction Through the Communities of Littlerock, Pearblossom, Llano and the City of Palmdale

SCH Number: 1998091007

Caltrans

District 7 • 120 South Spring Street • Los Angeles, California

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188420; 188430

Widen Route 138 from Avenue T to Route 18 Junction

Palmdale, Littlerock, Pearblossom, and Llano, County of Los Angeles, California

CEQA FINAL ENVIRONMENTAL IMPACT REPORT NEPA ENVIRONMENTAL ASSESSMENT AND SECTION 4(f) EVALUATION

Pursuant to Division 13, Public Resources Code,
42 U.S.C. 4332(2)(C), and 49 U.S.C. 303

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
and
THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agencies
Army Corps of Engineers
United States Fish and Wildlife Services
California Fish and Game
Regional Water Quality Control Board

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ABSTRACT

This Environmental Impact Report addresses the environmental consequences of the widening of State Route 138 from Avenue T in Palmdale to the State Route 138/18 Interchange. Five build alternatives and a no-action alternative are discussed in this document. The proposed project may result in environmental impacts to a historic site eligible for the National Register of Historic Places and contribute to a reduction in habitat for local endangered species. Mitigation measures can reduce these impacts.

FEDERAL HIGHWAY ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT
FOR

State Route 138 Widening Project
From Avenue T to State Route 18 junction through the
Communities of Littlerock, Pearblossom, Llano and the City of Palmdale in
Los Angeles County, California

The Federal Highway Administration (FHWA) has determined that the proposed project will have no significant impact on the human environment. This Finding of No Significant Impact is based on the attached Environmental Assessment (EA) and incorporated technical reports, which have been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate measures to minimize harm. These documents provide sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required. The FHWA assumes responsibility for the accuracy, scope, and content of the attached EA and incorporated technical reports.

Approved:

Cesar E. Perez
Senior Transportation Engineer

3-29-01
Date

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S.0 Summary

The Final Environmental Impact Report/Environmental Assessment (EIR/EA) is in compliance with the guidelines and requirements set forth by both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). This document provides the following components:

- A description of the purpose and need for the project
- A discussion of alternatives to the project
- A description of the project's affected environment
- Documentation of the project's potential environmental effects
- A description of measures to mitigate substantial environmental impacts

S.1 Purpose and Need for the Project

State Route 138 is a 4-lane divided urban highway from Route 14 to Avenue T, where it becomes a 2-lane facility carrying east-west traffic to its terminus at Crestline in the San Bernardino Mountains. State Route 138 is being used increasingly as a by-pass for recreation vehicles and heavy trucks, coming from the north and going to Las Vegas, Barstow, Victorville, San Bernardino County, and Riverside County, to avoid the congestion of the Los Angeles metropolitan area.

State Route 138 operates with a Level of Service (D/E), which is below the Caltrans standard for this type of arterial highway, which causes substantial delay to motorists (See page 14).

The existing pavement profile east of the community of Pearblossom is a rolling profile with depressions originally designed to accommodate the passage of drainage flows. These depressions in the pavement have the effect of reducing the stopping and passing sight distance available to the user. The rolling profile and lack of passing lanes have resulted in a high number of cross centerline accidents. Analysis from the Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) for the period from April 1, 1994 to March 31, 1999 indicated the actual accident rate is .81/million vehicle miles traveled (mvm) within the project limits, which is lower than the statewide average of 1.02 /mvm. However, the actual fatality rate is 0.049/mvm, which is higher than the statewide average of 0.038/mvm. The proposed project is intended to achieve the following goals:

- Improve safety
- Facilitate the efficient flow of goods and services through this area
- Conform to state, regional, and local plans and policies.

S.2 Alternatives under Consideration

The California Department of Transportation (Caltrans) proposes to widen State Route 138 from an existing 2-lane highway to a standard 4 lane conventional highway from Avenue T at post mile (PM) 51.4 (Kilo Post 82.7) to the Junction of State Route 138 and State Route 18, PM 69.4(KP 111.69), a distance of approximately 18.0 miles (29 kilometers). Other proposed features for the highway widening are curve corrections, junction realignment, a proposed connector from eastbound State Route 138 to eastbound State Route 18 and bridge widening (see section 2.1). The preferred

alternative is Alternative 1 Design Variation B: South of Llano del Rio Hotel and North of U.S. Post office.

The addition of a second lane in both directions will decrease the need for vehicles to cross over the median to pass slow moving traffic and thereby reduce the number of cross-median. Also the addition of a striped median would provide a two way left turn opportunity.

Alternative 1: Widening along existing facility

This alternative involves the addition of one lane in each direction, upgrading the existing facility to four (4) standard 12 ft (3.6 m) wide lanes, 8 ft (2.4 m) wide shoulders, and a 16 ft (4.8 m) wide striped median for left turns. The existing alignment and profile would be maintained except in the community of Pearblossom where the alignment would shift to the north by approximately 11.8 ft to 15.0 ft (3.6 to 4.6 m) from 121st St. East to Longview Road and then return to the existing roadway. The vertical profile would change from Pearblossom to the junction with State Route 18 to improve stopping sight distance and accommodate drainage culverts. Curves would be realigned and the bridges at California Aqueduct and Little Rock Creek would be widened. The bridge at Big Rock Wash would be replaced.

Design Variation A: South of Llano del Rio Hotel

This design variation involves all of the features of Alternative 1; however, near the community of Llano a new alignment would be constructed to the south to avoid impacts to the Llano del Rio site. The new alignment will shift to the south by approximately 20 ft (6 m) just east of 165th Street East and will continue east until it rejoins the existing highway west of 175th Street. This variation would not change the profile of the existing roadway.

Design Variation B (Preferred Alternative): South of Llano del Rio Hotel and North of U.S. Post Office

This design variation involves all the features of Alternative 1; however near the Llano del Rio site widening of the existing roadway will occur 82 ft (25 m) to the south and rejoin the existing roadway before the Post Office and the profile will be raised approximately 5 ft (1.52 m) to accommodate the arch type pipe drainage culverts for this variation before and after the Llano del Rio site.

Design Variation C: South of Llano del Rio Hotel

This design variation involves all the features of Alternative 1; however this variation proposes to realign the highway approximately 394 ft (120 m) to the south in order to raise the roadway profile approximately15 ft (4.6 m) to accommodate 8 ft x 8 ft (2.4 m x 2.4 m) drainage culverts and avoid the hotel.

Design Variation D: Avenue V, Fort Tejon and Avenue V-8

This variation involves all of the features of Alternative 1; however, near the community of Littlerock a new alignment will be constructed to the south of the existing alignment. At 70th Street East, this alignment will veer south towards Avenue V and then continue along Avenue V to 82nd Street. At 82nd Street, the alignment will veer further to the south to continue along Fort Tejon Road and will then traverse further east along Avenue V-8 until it rejoins the existing highway at the intersection of 116th Street East and State Route138 (PM 58.67, KP 94.52).

Design VariationE: Avenue V
This alternative involves all of the features of Alternative 1; however, near the community of Littlerock a new alignment will be constructed to the south of the existing alignment. At 70th Street East, this alignment will veer south towards Avenue V and then continue along Avenue V until it rejoins the existing highway at the intersection of Avenue V and State Route 138 (PM 57.94, KP 93.34).

Alternative 2: Building of Freeway

This alternative consisted of developing a freeway in the State Route 138 corridor. This alternative was withdrawn from consideration at this time as it would not address the safety and operational problems of the existing highway and funding is not available.

Alternative 3: TransportationSystem Management (TSM)

At the present time the project area does not meet the criteria for a Transportation System Management program. The project area is located in a unincorporated/rural area of Los Angeles County with the population below the 200,000 level that would make it eligible. This alternative is no longer under consideration due to its inability to address project goals.

Alternative 4: Widening along the existing highway through Pearblossom

This alternative proposed to widen both sides of the highway through the community of Pearblossom. This alternative is no longer under consideration due to the substantial commercial and residential impacts to the community of Pearblossom by eliminating the center of the town.

Alternative 5: No Action

This alternative retains the existing roadway conditions.

S.3 Other Actions in the Same Area

Caltrans has also proposed improvements on State Route 138 from State Route 14 to Avenue T. The other projects are planned or under construction in the project vicinity:

- Restripe 4-lane to 6-lane in and near Palmdale from State Route 14 to 30th St.. This project is in its final design and construction on this project is scheduled to begin in December 2000.
- Roadway Rehabilitation in and near Palmdale from State Route 14 to 57th St. East. This project is in its final design and construction on this project is scheduled to begin in December 2000.
- The State Route 138 Safety Corridor Task Force (Section 2.4) has identified deficiencies and coordinated work through various agencies and has increased the presence of California Highway Patrol (CHP) in order to improve safety along the corridor. A complete list is in Section 2.4.

S.4 Environmental Consequences and Recommended Mitigation Measures

The following matrix summarizes anticipated impacts of the proposed project and the measures to minimize those impacts. Section 3.0 and 4.0 discuss in detail the project impacts and measures to mitigate and/or minimize the impacts.

Table 1 Improvements Project and Environmental Evaluation Summary of Effects

Alternatives with Design Variations	Beneficial Impacts	Potential Impact	Mitigation Summary
4.1 Aesthetics			
• Alternatives 1 (Design variations A-E) would all have the same potential impacts		• Relocation of Joshua Trees along the existing roadway	• Revegetation of all areas temporarily impacted by construction activities • Contour grading techniques to minimize disruption of natural forms • Compliance with Caltrans Standard Specifications for lighting and signing
• No Action Alternative		• No impact to Joshua Trees or Utilities	
4.2 Geology			
• Alternatives 1 (Design variations A-E) would all have the same potential impacts		• Located in an area subject to geologic (seismic hazards)	• Detailed geotechnical studies in conjunction with final design to provide boring, soil, and fault information. Construct to Caltrans seismic standards
• No Action Alternative		• No potential impacts	
4.3 Soils			
• Alternatives 1 (Design variations A-E) would all have the same potential impacts		• Potential for erosion and dust during and immediately after construction	• Conformance with Caltrans Standard Specifications for ground disturbing activities
• No Action Alternative		• No potential for erosion	

Alternatives with Design Variations	Beneficial Impacts	Potential Impact	Mitigation Summary
4.4 Hydrology, Floodplains, and Water Quality			
• Alternatives 1 (Design variations A-E) would have the same potential impacts	• Replacement of Big Rock Wash Bridge with one single structure instead of current two structure bridge. • Improvements to Big Rock Wash Bridge and channel would reduce the floodplain area and provide additional usable land	• Potential for erosion • Increased runoff	• Drainage would be designed to perpetuate existing flows to the maximum extent feasible • Compliance with conditions of 1601 agreement and 401, 404, NPDES permits • Conformance with Caltrans Standard specifications sections 7-1.01 Groundwater Pollution Control Program and/or Storm Water Pollution Prevention Plan
• No Action Alternative		• No drainage built to accommodate existing floodwater. Floodwater would continue to wash over the road • No improvement to bridges along State Route 138	

Alternatives with Design Variations	Beneficial Impacts	Potential Impact	Mitigation Summary
4.5 Biological			
• Alternatives 1 (Design variations A,B,C) would all have the same potential impacts	• Identification of existing flora and fauna	• Relocation of Joshua Trees • Disruption of existing wildlife corridors • Removal of alluvial fan scrub	• Acquisition by Caltrans of replacement Joshua Tree woodland • Would consider potential off-site mitigation at a location such as Saddleback Butte State Park or the Antelope Valley Museum for the Desert tortoise and Mohave Ground squirrel habitat
• Design Variation D and E		• Impacts are similar to rest of Alternative 1. These design variations would go over relatively undisturbed vegetation and have a greater impact to wildlife than the above variations	
• No Action Alternative		• No impact to wildlife and vegetation	
4.6 Wetlands and other Waters of the U.S.			
• Alternatives 1 (Design variations A-E) would have the same potential impacts		• Proposed project would impact jurisdictional waters of the U.S. at various locations throughout the project. Currently the ACOE is in the process of determining which areas are under their jurisdiction. • Potential Impacts to State and Federal wetlands	• Compliance with conditions of Nationwide 404 permit, Section 1601 Streambed Alteration Agreement • Conformance with Caltrans Standard Specifications for ground disturbing activities • Mitigation would be established in the permit consultation with the U.S. Army Corps of Engineers, California Department of Fish and Game, and the State Water Quality Control Board
• No Action Alternative		• No impact to jurisdictional waters of the U.S.	

Alternatives with Design Variations	Beneficial Impacts	Potential Impact	Mitigation Summary
4.7 Cultural			
• Alternatives 1 (Design variations A-E) would have the same potential impacts	• Identification of potential archaeological artifacts	• Direct impact to 1 property/site eligible for NRHP status	• If additional resources found, work halted until qualified archaeologist assesses significance • Compliance with conditions of Section 106 Memorandum of Agreement and Section 4(f) for historic properties
• No Action Alternative		• No impact to Cultural Resource	
4.8 Air Quality			
• Alternatives 1 (Design variations A-E) would have the same potential impacts	• Would not cause or contribute to any new localized CO or PM_{10} violation or increase the frequency or severity of any existing CO or PM_{10} nonattainment and maintenance areas • Decrease in pollutants over long term due to congestion reduction and idle time	• CO concentrations increase at receptors adjacent to the facility • Potential for dust and equipment generated emissions during construction	• Project Construction will be conducted in accordance with all federal, State, and local regulations and rules that govern site construction activities and emissions from construction vehicles • Submit to SCAQMD Fugitive Dust Rule 403 Plan prior to project construction • Operational/Vehicle Trip Emissions Conformance with: • CARB & SCAQMD requirements • Other regional air quality management plans (RTIP, RTP) • Section 176 (C)(3)(B) of the 1990 Clean Air Act Amendments Construction Dust and Equipment Generated Emissions
• No Action alternative		• Would have an increase in pollutants over long term due to increased congestion and idle time	

Alternatives with Design Variations	Beneficial Impacts	Potential Impact	Mitigation Summary
4.9 Noise			
• Alternatives 1 (Design variations A-E) would have the same potential impacts		• Temporary increase in noise levels during construction • Permanent increase in noise levels from project operation	• Provision of noise attenuation in accordance with the latest FHWA noise abatement criteria and state noise policies at the time the project is advertised for construction • Noise{ XE "Noise" } mitigation is not considered feasible and not recommended for this project
• No Action alternative		• Current noise levels are above the State and FHWA accepted levels	
4.10 Land Use			
• Alternatives 1 (Design variations A-E) would have the same potential impacts		• Reduction of prime agricultural land by 0.14 (0.057 hectares) to 1.04 (0.42 ha) acres in Los Angeles County, which is not substantial	• No mitigation necessary
• No Action Alternative		• No impact to Farm land	
4.11 Parks and Recreation			
• Alternatives 1 (Design variations A-E) and the No Action Alternative would have the same potential impacts	• Maintain existing equestrian trails • Create an Equestrian crossing at 96th Street East and the California Aqueduct		
4.12 Public Services and Utilities			
• Alternatives 1 (Design variations A-E) would have the same potential impacts	• Improvement of response time for emergency vehicles • Reduction in cross-centerline accident{ XE "accident" }	• Relocation{ XE "Relocation" } and/or removal of utility lines within the corridor	• Relocation{ XE "Relocation" } and/or accommodation of utility lines with no major disruption of services
• No Action Alternative		• Accident rates would increase due to no addition of lane in either direction • Response time for emergency vehicles would stay the same or possible decrease	

Alternatives with Design Variations	Beneficial Impacts	Potential Impact	Mitigation Summary
4.13 Hazardous Waste			
• Alternatives 1 (Design variations A-E) would have the same potential impacts	• Preliminary Site Investigation of potential hazardous waste{ XE "Hazardous Waste" } sites • Cleanup of potential hazardous/contaminated waste sites	• Potential soil{ XE "Soil" } contamination • Potential lead contamination	• On site visual inspection of property with identification of drums, containers, vents, soil{ XE "Soil" } staining or any other possible point source contaminants • Application of aerial lead variance
• No Action Alternative		• Potential hazardous waste sites would be maintained	
4.14 Social and Economic			
• Alternatives 1 (Design variations A,B,C) would all have the same potential impacts	• Greater efficiency in transportation of goods and materials	• Original design required 3 full takes and 41 partial takes of residential property and 5 full take and 82 partial takes of non-residential property • Removal of street frontage parking	• Relocation{ XE "Relocation" } Assistance to be provided as part of the project • Provision of pedestrian{ XE "Pedestrian" } access • Modification of school accessibility and circulation{ XE "Circulation" } • Pearblossom avoidance alternative to reduce the number of properties acquired
• Design Variation D and E		• This alignment would remove traffic through the Community of Littlerock and eliminate all business generated by the highway	
• No Action Alternative		• Decrease efficiency in transportation of goods and materials	
4.15 Transportation and Circulation			
• Alternatives 1 (Design variations A,B,C) would all have the same potential impacts	• Reduction of overall congestion, accident{ XE "accident" } rates and improved mobility	• Temporary construction delays	• Highway widening which would include additional lanes in each direction, two way left turn lane, shoulders, parking lane and turning lanes at the intersection
• Design Variation D and E		• Traffic and Circulation would be in an area of the community where their was none before causing an increase in traffic on side streets	
• No Action Alternative		• Increase of overall congestion, accident{ XE "accident" } rates and decreased mobility	

Alternatives with Design Variations	Beneficial Impacts	Potential Impact	Mitigation Summary
4.16 Construction			
• Alternatives 1 (Design variations A-E) would have the same potential impacts		• Temporary impacts associated with noise, vibration, dust{ XE "Dust" }, erosion{ XE "Erosion" }, aesthetics{ XE "Aesthetics" }, and traffic{ XE "Traffic" }	• Covered in individual sections • Implementation of Traffic Management Plan
• No Action Alternative		• No action alternative would result in no construction	

1.0 Purpose and Need

1.1 Purpose of the Project

State Route 138 is regarded as an urban Principal Arterial (for the High Desert Corridor connection) between State Route 14 (Antelope Valley Freeway, PM 43.42, KP 69.88) in Palmdale and the Pearblossom Highway at Avenue T, (PM 51.41, KP 82.7). From Avenue T to the junction with State Route 18 (PM 69.4, KP 111.69) State Route 138 is a 2 lane undivided rural arterial highway with the exception in the areas between 60th and 75th Streets and between 106th and 116th Street East where it becomes a 4 lane highway for a short distance. State Route 138 does not have current standard drainage facilities. See Figures 1 and 2. The proposed project is intended to achieve the following goals:

- Improve safety.
- Facilitate the efficient flow of goods and services through this area.
- Conform to state, regional, and local plans and policies.

This section describes the existing operational deficiencies, projected travel demands in the State Route 138 corridor area, and other considerations that have created the need for the proposed project.

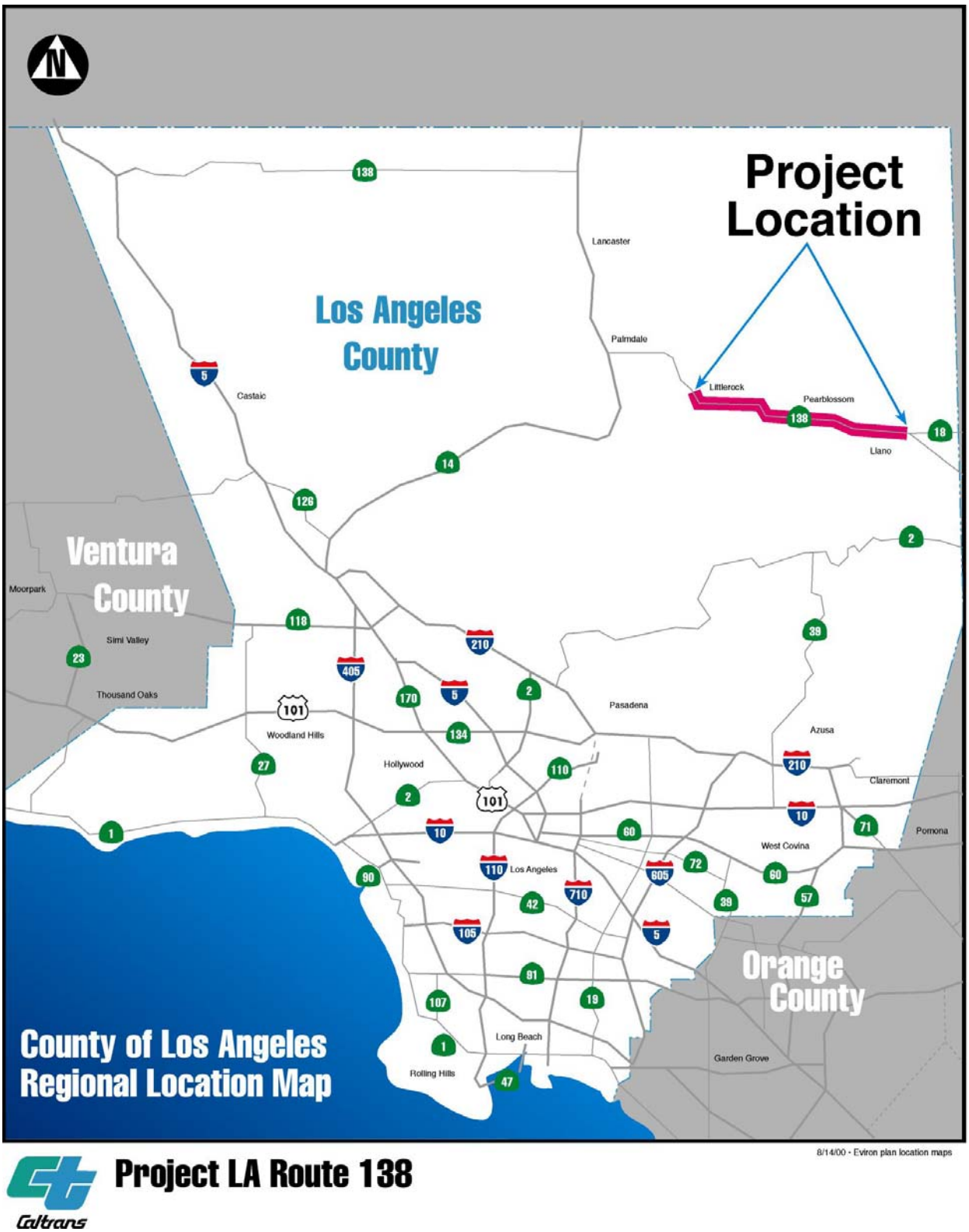
1.2 Need for the Project

The existing section of State Route 138 between Avenue T (PM 51.4, KP 82.7) and the junction of State Route 138/18 (PM 69.4, KP 111.69) consists of two12 ft (3.6 m) mixed flow lanes, one in each direction, with a broken center line in some areas to allow vehicles to pass slow moving traffic. The paved right shoulder is 5 ft (1.5 m) to 8 ft (2.4 m) wide. Beyond the shoulder, swales have been graded to provide drainage along the highway. Vertical grades through the entire route are less than 3 % except between Big Rock Wash (PM 63.0, KP 101.37) and the junction of State Route 138/18 (PM 69.4, KP 111.69) where swales are greater than 3% to allow floodwater to cross the roadway. There are a several pockets for left turns. The California Aqueduct crosses State Route 138 at two locations, under the California Aqueduct Bridge (Br# 53-2098) (PM 56.17, KP 90.3), and underground at approximately 116th Street (PM 58.8, KP 94.51).

1.2.1 Capacity Issues

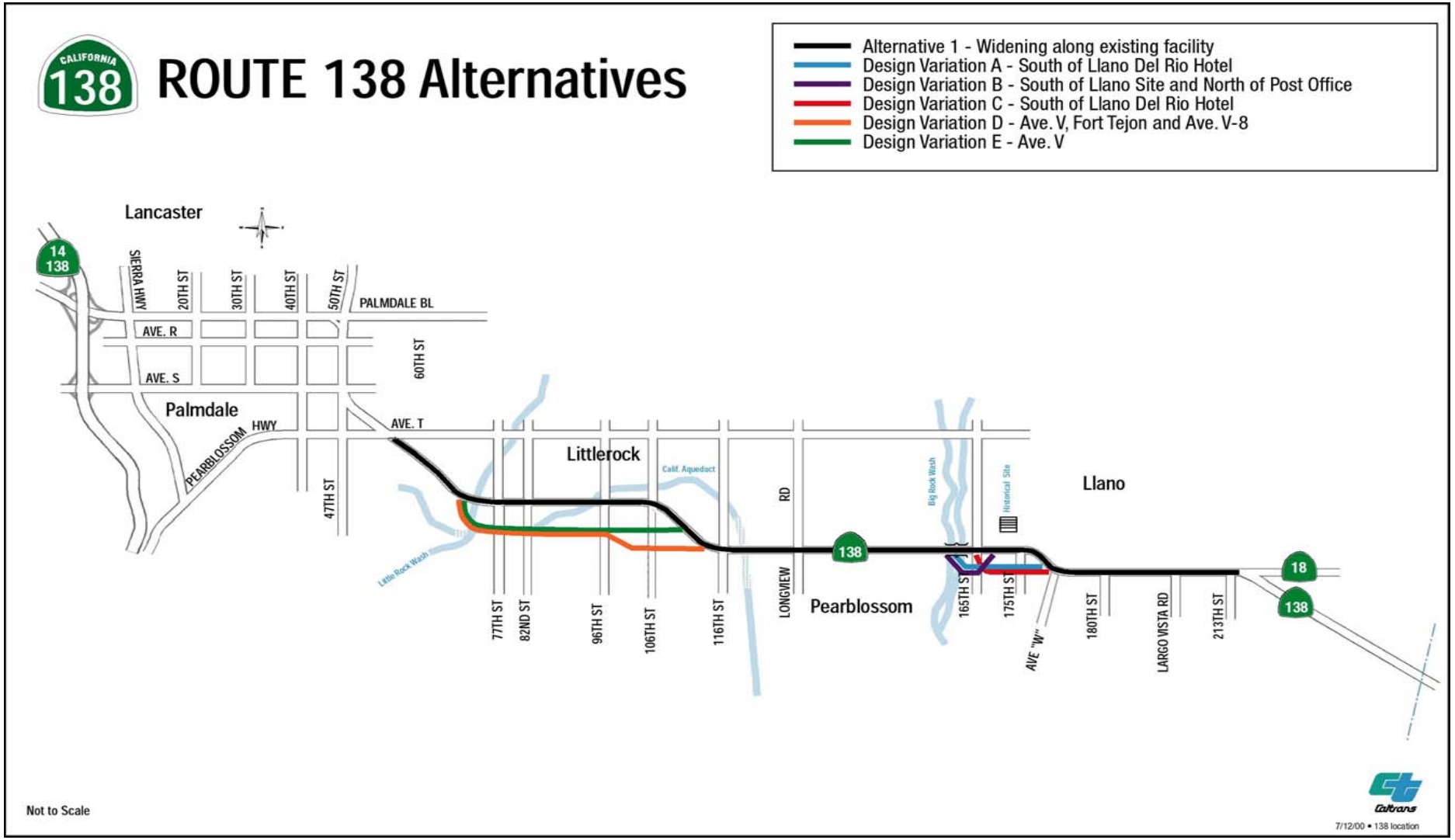
Economic and population growth in the Antelope Valley has rapidly accelerated in the past decade. Southern California Association of Governments (SCAG) predicts high growth rates (approximately 5% per year) for the Palmdale area with the presumption that aerospace industry activity will increase. There has been extensive growth in population housing and employment.

State Route 138 carries heavy vehicle traffic including a substantial percentage of trucks. This route is being used increasingly as a by-pass for recreation vehicles and heavy trucks, coming from the north and going to Las Vegas, Barstow, Victorville, San Bernardino County, and Riverside County, to avoid the congestion of the Los Angeles metropolitan area.



Source: Caltrans District 7

FIGURE 1 REGIONAL MAP



Source: Caltrans District 7

FIGURE 2 LOCATION MAP

The ability of a highway to accommodate traffic is typically measured in terms of level of service (LOS). Based on the ratio of traffic volume to the design capacity of the facility, LOS is expressed as a range from LOS A (free traffic flow with low volumes and high speeds) to LOS F (traffic volumes exceed capacity and results in forced flow operations at low speed). See Table 2 and Figure 3.

Table 2 Level of ServiceCriteria

Level of Service	Description
A	Free flow conditions. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds; high maneuverability.
B	Stable flow, but the presence of others in the traffic stream begins to be noticeable. Freedom to select desired speeds but a slight decline in maneuverability.
C	Stable flow, but users become affected considerably by interactions with others in the traffic stream. Selection of speed is affected by presence of others; lowered maneuverability
D	High density but stable flow. Speed and freedom to maneuver are severely restricted.
E	Unstable flow. Operating conditions are at or near capacity. All speeds are reduced to a low, relatively uniform value. Queues begin to form and maneuverability extremely difficult.
F	Jammed forced flow conditions.

The Average Daily Traffic (ADT) volumes in 1998 on State Route 138 within the project limits varied from 17,500 (vicinity of Avenue T) to 10,600 vehicles (vicinity of Junction of State Route 18). The highway presently operates at LOS E in the vicinity of Avenue T to 96th Street East and LOS D in the vicinity of 96th Street East to the Junction of State Route 138/18. Table 3 shows the current (1998) and future (2024) level of service. Construction on the highway-widening project is not expected to start until 2003. Therefore traffic projections are calculated 20 years from the year of project construction.

Table 3 Level of Service (LOS) Analysis for Build/No Build Alternative

Location	LOS 1998	LOS 2024 (No Build) 2 lane Highway	LOS 2024 (Build) 4 lane Highway
Avenue T to Little Rock Wash	E	F	B
Little Rock Wash to 96th Street East	E	E	B
96th Street East to Longview Road	D	E	B
Longview Road to 165th Street East	D	F	B
165th Street East to Junction Route 18	D	F	B

Source: Office of Traffic Investigations/Traffic Study 6/2000

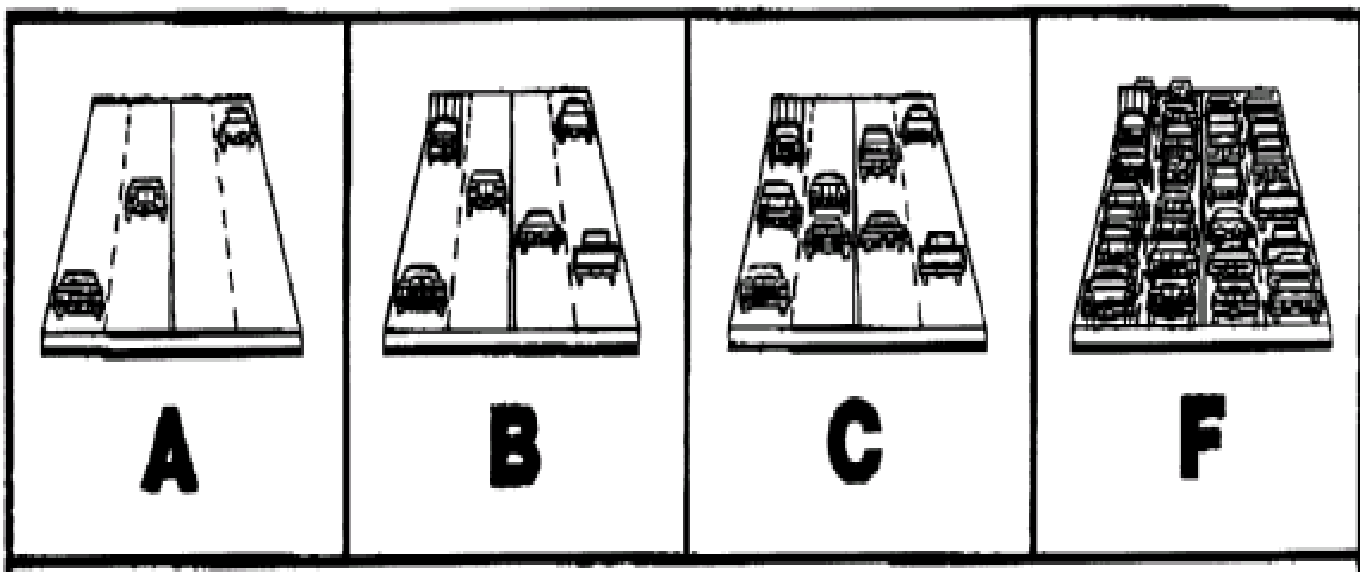


FIGURE 3TYPICAL LEVEL OF SERVICE{ XE "LEVEL OF SERVICE" } FOR EXISTING ROADWAYS

Average Daily Traffic (ADT) for 1998 ranges from a low of 6,900 vehicles near the junction of State Route 18 East to a high of 18,300 vehicles near Avenue T, with peak hour traffic of 1,650 and 1,600 vehicles (both directions) respectively as shown in Table 4, State Route 138 Present Traffic Volumes.

State Route 138 has a high percentage of truck traffic. As shown in Table 4, State Route 138 1998 Traffic Volumes indicates the percentage of trucks is 15.2% in the vicinity of Avenue T and 4.7% near the junction of State Route 138/18.

Table 4 1998 Traffic Volumes

Locations	West Peak Hr	ADT	East Peak Hr	ADT	Truck Percentage W/E
Avenue T	1,650	18,300	1,600	17,500	15.2/14.0
Little Rock Wash	1,350	15,000	1,350	15,000	10.7
Little Rock, 96th St. East	1,350	15,000	1,250	13,700	-
Pearblossom, Longview Road	1,200	13,400	1,100	12,300	-
Llano, 165th St. East	1,100	11,900	1,150	12,600	-
Junction Route 18 East	960	10,600	620	6,900	6.0/4.7

Source: Caltrans District 7 Traffic Operations 1998

The Los Angeles Regional Transportation Study (LARTS) traffic projections for the year 2025 (Table 5) range from a maximum of 26,700 ADT between Largo Vista Road and State Route 18/138 junction to a low of 22,700 ADT from 136th Street East to 165th Street East. The area between Largo Vista Road and State Route 18/138 Junction has a peak AM traffic projection of 1,975 vehicles and a peak PM traffic of 2,750 vehicles. The ideal capacity for smooth flow of traffic for a 2-lane conventional highway is approximately 1,200 vehicles per hour per lane. This data shows that State Route 138 should be upgraded to a 4-lane conventional highway so that Level of Service (LOS) C can be achieved as illustrated by Table 3 Level of Service (LOS) Analysis for Build/No Build Alternative.

The existing Level of Service (LOS) for State Route 138 between Avenue T and the junction of State Route 138/18 is D/E. It is expected that by adding 2 lanes to make it a 4-lane conventional highway, the LOS will be maintained at LOS B, which would consist of a stable flow of traffic through 2024.

Table 5 Future (2025) Traffic Volumes

Location	East		ADT	West		ADT
	AM	PM		AM	PM	
Avenue T to Little Rock Wash	875	1400	13,700	975	950	13,300
Little Rock Wash to 90th St East	1000	1425	14,900	1025	1125	14,700
90th St East to 106th St East	800	1275	12,000	925	850	11,600
106th St East to 136th St East	925	1275	12,400	875	925	11,800
136th St East to 165th St East	800	1125	11,600	875	925	11,100
165th St East to Largo Vista Rd	900	1425	14,400	1050	1200	13,500
Largo Vista Rd to the State Route 18/138 Junction	925	1375	13,800	1050	1375	12,900

Source: Caltrans District 7 LARTS Traffic Projections 10/11/2000

1.2.2 Safety Problems

This existing stretch of State Route 138 has one lane in each direction with passing lanes in only two areas (between 60th and 75th Streets and between 106th and 116th Street East).

Analysis from the Caltrans' Traffic Accident Surveillance and Analysis System (TASAS) for the period from April 1, 1994 to March 31, 1999 indicated the actual accident rate is .81/million vehicle miles traveled (mvm) within the project limits, which is lower than the statewide average of 1.02 /mvm. However, the actual fatality rate is 0.049/mvm, which is higher than the statewide average of 0.038/mvm. A more detailed analysis of the accident summary reveals that there were 25 fatalities and 354 injured within this same period within the project limits (Avenue T to the Junction State Route 138/18).

State Route 138 has been identified as having a high number of cross-centerline accidents. The Caltrans 2-3 lane cross-centerline accident monitoring program has identified a pattern of cross-centerline accidents between 96th Street East to approximately the junction of State Route 138/18. For the 5-year analysis period of 1994-1998 there were 10 fatal cross-centerline accidents between 96th Street East and the Junction of the 138/18.

The high truck volumes along with their slower speeds create a queue along the 2-lane section because of insufficient passing opportunities. The majority of the accidents indicate that the types of collision were broadside (21.5%), rear end (28.7%), and hit object (19.6%). See Table 6 for detailed examinations of accidents.

In response to community concern over accident history Caltrans District 7 (which consists of Los Angeles and Ventura County) in association with other agencies formed a Highway 138 Safety Corridor Task Force. See section 2.7.

Table 6 Accident History
4/1/94 through 3/31/1999 (60 Months)

	Code	Number	Percent
Primary Collision Factor			
	Influence of Alcohol	31	8.3
	Failure to Yield	49	13.1
	Improper Turn	74	19.8
	Speeding	105	28.2
	Other Violations	113	30.6
Type of Collision			
	Head-on	28	7.5
	Sideswipe	42	11.2
	Rear-end	107	28.7
	Broadside	80	21.5
	Hit Object	73	19.6
	Overturn	24	6.4
	Other	18	4.8

Source: Caltrans District 7 TASAS April 2000

Table 7 Accident Summary
04/01/94 through 3/31/99 (60 Months)

Accident Period	Total	Fatalities (F)	Injury (I)	F+I	Multi Vehicle	Persons Killed	Injured
04/01/94 to 03/31/95	64	1	31	32	48	1	54
04/01/95 to 03/31/96	70	7	33	40	51	10	73
04/01/96 to 03/31/97	76	3	37	40	63	3	88
04/01/97 to 03/31/98	70	4	33	37	50	4	69
04/01/98 to 03/31/99	88	5	34	39	66	7	70
04/01/94 to 03/31/99	368	20	168	188	278	25	354

Source: Caltrans District 7 TASAS April 2000

Table 8 Accident Comparison to the Statewide Average
04/01/94 through 3/31/99 (60 Months)

Accident Period	Accident Fatalities	Rate F+I	Actual Total	State Avg. Fatalities	State Avg. F+I	State Avg. Total
04/01/94 to 03/31/95	.011	.36	.72	.039	.51	.98
04/01/95 to 03/31/96	.079	.45	.79	.039	.51	.98
04/01/96 to 03/31/97	.035	.46	.88	.039	.51	.98
04/01/97 to 03/31/98	.046	.43	.81	.039	.51	.98
04/01/98 to 03/31/99	.058	.45	1.02	.039	.51	.98
04/01/94 to 03/31/99	.046	.43	.84	.039	.51	.98

Source: Caltrans District 7 TASAS April 2000

1.2.3 Operational Deficiencies

The existing pavement profile east of the community of Pearblossom is a rolling profile with drastically deep depressions originally designed to accommodate the passage of flash drainage flows. These depressions in the pavement have the effect of diminishing the stopping and passing sight distance available to the user. It should be noted that the sight distance is one of the 13 mandatory controlling design criteria elements required in the design of a highway facility.

The accidents associated with wet pavement conditions are relatively high, about 9% of the total accidents can be attributed to wet conditions. If drainage conditions remain the same and drainage is allowed to flow over the roadway, it can be expected that these types of accidentswill increase as result of the additional traffic lanes, increase traffic volumes, and higher speeds.

The present condition of the shoulders consists of the earth berms along side the roadway in the driver's recovery area this reduces the recovery areas for errant drivers and poses a potential safety hazard. Also the existing facility has curves in the project areas that are not up to the latest design standards at the following locations:

- 72nd Street East
- 116th Street
- 175th Street East
- Avenue W
- State Route 138/18 Junction

An Engineering and Traffic survey was completed in 1997 in which speed measurements were obtained. The observed critical speeds were generally around 65 to 70 miles per hour (mph) (104-112 kilometers per hour (kph)) outside developed areas, with 45 to 60 mph (72-104 kph)speeds in the community of Littlerock and 50-55 mph (80-88 kph) speeds in the community of Pearblossom. These curves do not provide adequate stopping sight distance for the speeds that motorists drive. The State Route 138/18 junction is on a curve, which has a left turn pocket onto State Route 18. The inadequate space for vehicles making a left hand turn on to State Route 18 from State Route 138 has the potential to create a queuing effect on the highway that backs up the traffic and poses the potential for rear end collisions.

1.2.4 Structural Deficiencies

Big Rock Wash Bridge (Bridge #53-313 and Bridge #53-314)

The existing bridges do not have sufficient waterway to convey a 100-year storm. Also, the existing bridge is not wide enough to carry the four lanes that are proposed for State Route 138. Big Rock Wash Bridge is in an area that has a rolling profile and has a restricted sight distance.

The Big Rock Wash Bridges are concrete bridges that were constructed in 1948 using the supports from earlier timber bridges. Bridge #53-313 is a two span continuous slab bridge that is 40 ft (12.2 m) long and bridge #53-314 is a three span continuous slab bridge that is 60 ft (18.2 m) long. Each bridge is presently 32.8 ft (10.0 m) wide. The new bridge would replace the two older bridges with one continuous bridge spanning Big Rock Wash.

The Q100 flow (100 year flood) for the Big Rock Wash Bridge was calculated by Caltrans District 7 Hydraulics to be 566 cubic meters per second (cms) (20,000 cubic feet per second (cfs)). Based on these flows the bridges will be overtopped by a 100-year storm event. The channels and bridges

currently have sufficient capacity for a 20-year flood. If the channels were allowed to aggrade to their natural state the bridge would only be able to handle a 10-year flood.

California Aqueduct (Bridge No. 53-2098)

It is proposed to widen both sides of the California Aqueduct Bridge at 96th Street East to accommodate four lanes and keep within the same alignment to bring the bridge up to current standards and to accommodate equestrian users.

Little Rock Wash Bridge (Bridge No. 53-0303R and Bridge No. 53-0303L)

Little Rock Wash Bridge consists of two bridges (53-0303R and 53-0303L). The westbound bridge (53-0303L) would be replaced. As a result the eastbound bridge (53-0303R) would be widened to the north to accommodate the 4-lane highway and bring the bridge up to current standard.

1.3 Summary

The proposed improvements of State Route 138 were planned to correct existing operational deficiencies, accommodate projected travel demands in the State Route 138 corridor area and achieve planning consistency. A transportation project is needed in this area to improve the safety characteristics, which would reduce the number of accidents. Adding an additional lane in both directions would allow traffic to flow at an acceptable Level of Service. Also the project would eliminate the need for fast moving vehicles to crossover the median to pass slow moving traffic thereby reducing the number of cross-centerline accidents. Due to the predicted increase in travel volumes, the existing facility will not be able to accommodate the future projected volumes adequately. In summary improvements to the existing State Route 138 facility are needed for the following reasons:

- Improve safety.
- Facilitate the efficient flow of goods and services through this area.
- Conform to state, regional, and local plans and policies.
- Vehicle miles of delay will continue to increase and vehicle hours of travel will increase from current conditions.
- Congestion on arterial roadways intersecting to State Route 138 will increase substantially from the 1999 conditions.
- Accident rates will continue to increase due to operational deficiencies.
- Regional emissions will increase due to the increase of vehicle hours of travel.

2.0 Alternatives including the Proposed Project

This section describes the alternative analysis by which the Preferred Alternative was identified. Also it describes how this process complies with the applicable requirements of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. Alternatives that were considered at various times are also described, along with the reasons why they were rejected. Related Transportation improvements, project phasing, and funding issues are also discussed.

The formulation of alternatives for analysis in this Environmental Impact Report/Environmental Assessment (EIR/EA) involved the review of prior studies and additional analysis. This analysis identified transportation system deficiencies, developed and screened a broad range of alternatives, and performed a detailed evaluation of those alternatives deemed most responsive to safety, travel and community concerns and demands. Alternatives were evaluated for their ability to attain project goals and objectives and as the alternative analysis process merged with the environmental process, the safety and transportation needs for the State Route 138 corridor were evaluated with consideration of environmental needs.

2.1 Alternative 1: Widening along existing facility

This alternative involves highway widening on State Route 138 between Avenue T to the west and the Los Angeles/San Bernardino County Line to the east. This alternative involves the addition of one lane in each direction, upgrading the existing facility to a standard 4 lane conventional highway with a 16 ft (4.8 m) median for turns. The existing alignment and profile would be maintained except in the community of Pearblossom where the alignment would shift to the north by approximately 12 ft (3.66 m) from 121st St. East to Longview Road and then return to the existing roadway. The vertical profile would change from Pearblossom to the junction with State Route 18 to improve stopping sight distance and accommodate drainage culverts. This alternative would include two 12 ft (3.6 m) lanes, in each direction, standard 8 ft (2.4 m) shoulders in undeveloped areas and 12 ft (3.6 m) shoulders in developed areas and a 16 ft (4.8 m) median for turns. Right-of-way width of 200 ft (60 m) would accommodate drainage culverts in undeveloped areas and curbs and gutters in developed areas. Present right-of-way varies from a minimum of 50 ft (15.24 m) to a maximum of 100 ft (30.48 m). See Figures 4 and 5. The preferred alternative is Alternative 1 Design Variation B: South of Llano del Rio Hotel and North of U.S. Post office.

Other proposed features for the highway widening are described below.

Curve Corrections - The widening will include curve corrections in the immediate vicinity of the following locations:

- 72nd Street East
- 116th Street
- 175th Street East
- Avenue W
- State Route 18 Junction.

Junction Modification – The project would modify the State Route 138/State Route 18 Junction by providing a direct connector from the eastbound 138 to the eastbound 18.

Bridge Widening – Two bridges, California Aqueduct (BR 53-2098), and Big Rock Wash (BR 53-313 and BR 53-314), will be widened. The widening of these bridges will accommodate drainage culverts and facilitate functional wildlife corridors. Little Rock Creek Bridge will have the existing median closed.

Elevation of Profile- the widening of the State Route 138 would include raised profiles along the highway to accommodate drainage requirements and eliminate the rolling profile from Pearblossom to State Route 18 thereby improving the stopping sight distance and reducing the number of fatal cross-median accidents.

It is Caltrans Policy to upgrade highways to the current highway standards in order to improve safety and efficiency in transportation. Consideration during the design process was given to the occurrences of flash floods between Big Rock Wash and Junction State Route 138/State Route18. The highway along this area is subjected to flood waters washing over the highway. To meet the drainage requirements for this area a design was developed that would raise the profile of the existing highway. Caltrans policy states that the design of highway drainage structures and other features must consider the probability of flooding and provide protection which is commensurate with the importance of the highway, the potential for property damage and traffic safety. Drainage design seeks to prevent the retention of water on the highway and provide for removal of water from the roadway.

Standard highway dimensions for the State Route 138 widening project can be classified into the following categories:

Developed Areas: The existing width of both east and westbound lanes within urbanized areas is approximately 30 ft (9.14 m) from the highway centerline. Both directions of the highway, within the limits of the proposed project, will be widened to include an additional 20 ft (6.10 m). After project construction, each direction of State Route 138 will have a total width of 52 ft (15.85 m) from the highway centerline. These dimensions are illustrated by Figure 4, Typical Cross Section for Developed Areas.

Undeveloped Areas: The existing width of both east and westbound lanes within undeveloped areas is approximately 30 ft (9.14 m) from the highway centerline. Both directions of the highway, within the limits of the proposed project, will be widened to include an additional 50 ft (15.24 m). After project construction the width of the highway will have a total width of 80 ft (24.38 m) from the highway centerline in order to accommodate drainage easements along the highway. However, it should be noted that the 52 ft (15.85 m) will apply only to areas of the roadway which require additional fill (imported and local borrow) during project construction. These dimensions are illustrated by Figure 5, Typical Cross Section Undeveloped Areas.

These measurements are the standard dimensions anticipated for the State Route 138 widening project; however, slight variations to this standard may occur. It should also be noted that these dimensions include both paved areas resulting from project implementation along with any additional right-of-way which may extend beyond paved areas after project implementation.

The following alternatives are based on the existing highway structure and proposed changes in alternative 1, but with specific design variations along certain portions of the State Route 138. See Figure 6 Design Alternatives State Route 138.

The implementation of this design variation would:

- Have a direct impact on the Llano del Rio Hotel Site

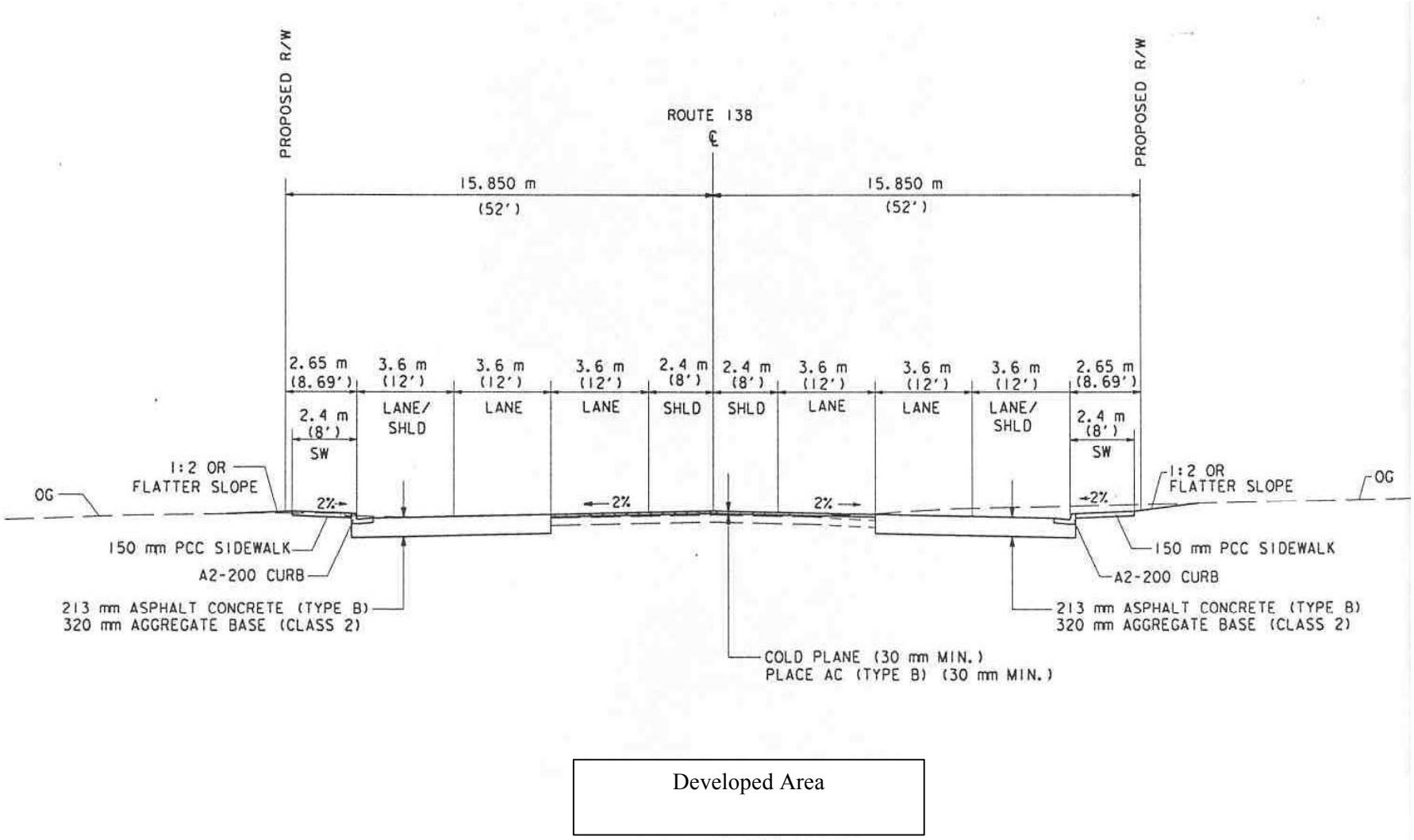


FIGURE 4 TYPICAL CROSS-SECTION FOR DEVELOPED AREA

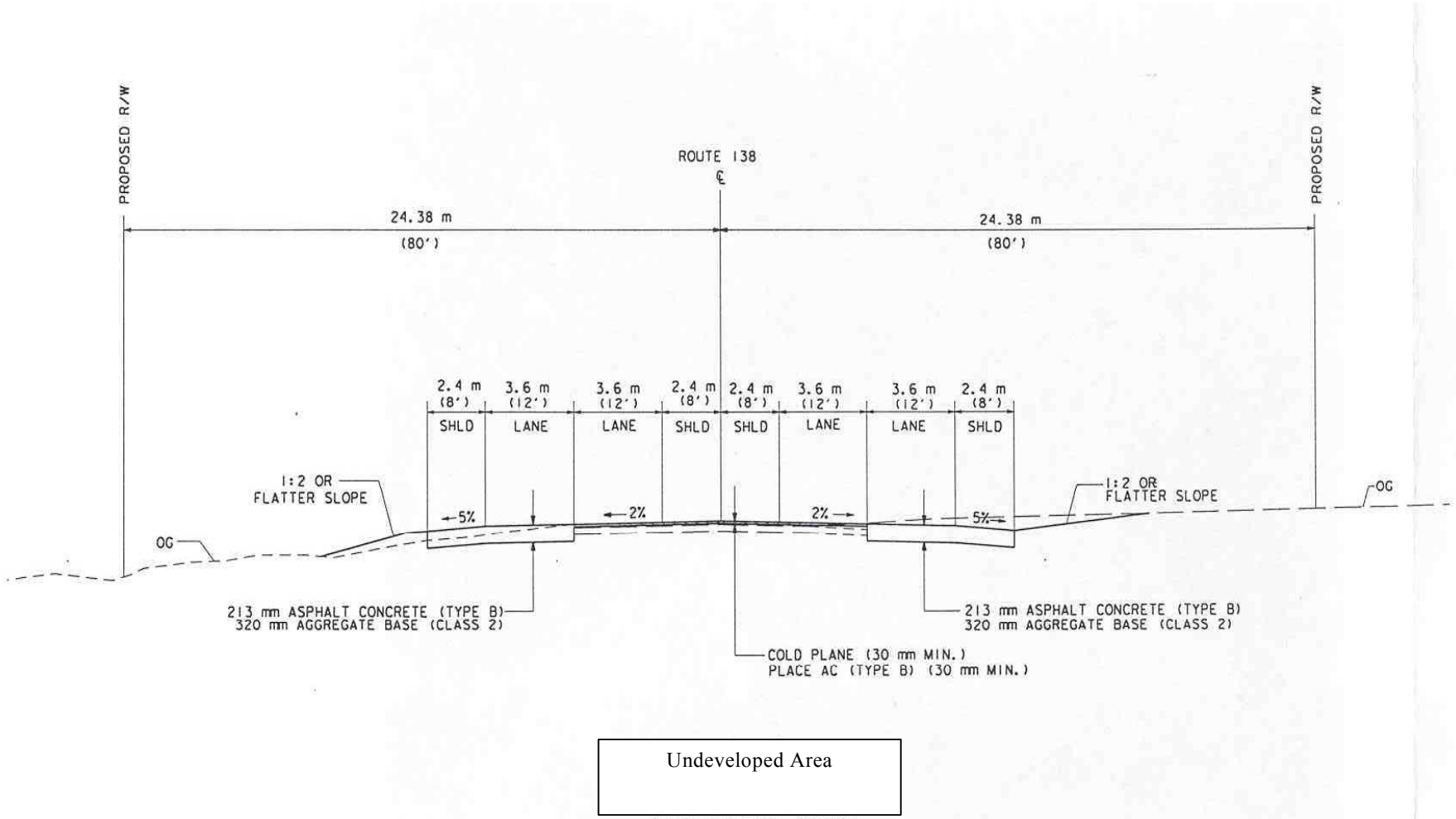


FIGURE 5 TYPICAL CROSS SECTION FOR UNDEVELOPED AREA

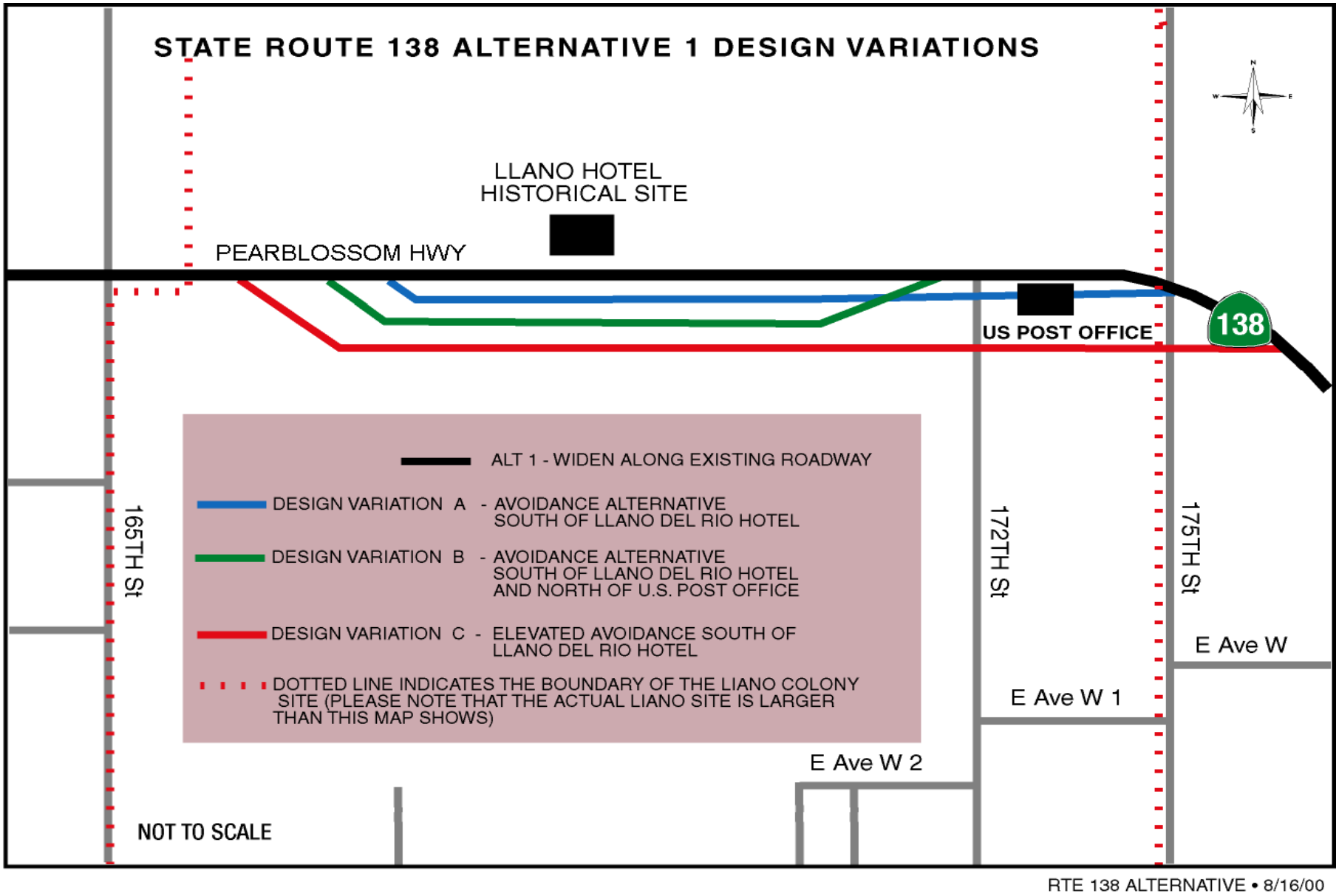


FIGURE 6 DESIGN VARIATIONS A, B, AND C

2.1.1 Design Variation A: South of Llano del Rio hotel

This design variation involves all of the features of Alternative 1; however, near the community of Llano a new alignment would be constructed to the south to avoid impacts to the Llano del Rio site. The new alignment will shift to the south by approximately 20 ft (6 m) just east of 165th Street East and will continue east until it rejoins the existing highway west of 175th Street.

The implementation of this design variation would:

- Create a barrier for the animals that migrate across the highway
- Relocate State Route 138 from its historic setting within the Llano del Rio Cooperative Colony Site
- Keep the existing rolling profile that limits sight distance
- Allow floodwaters to cross over the highway between Big Rock Wash and Junction State Route 138/State Route 18 causing unsafe conditions for motorists

2.1.2 Design Variation B (Preferred Alternative): South of Llano del Rio Hotel and North of U.S. Post Office

This design variation involves all the features of Alternative 1; however near the Llano del Rio hotel widening of the existing roadway will occur 82 ft (25 m) to the south and as the route approaches the U.S. Post office located in Llano it will shift north to the existing roadway to avoid it and the profile will be raised approximately 5 ft (1.52m) to accommodate the arch type pipe drainage culverts for this variation before and after the Llano hotel site.

The implementation of this design variation would:

- Create a barrier for the animals that migrate across the highway
- Relocate State Route 138 from its historic setting within the Llano del Rio Cooperative Colony Site

2.1.3 Design Variation C: South of Llano del Rio Hotel

This design variation involves all the features of Alternative 1; however this variation proposes to realign the highway approximately 394 ft (120 meters) to the south in order to raise the roadway profile approximately 15 ft (4.6 meters) to accommodate 8 ft (2.4 m) x 8 ft (2.4 m) drainage culverts for this variation and avoid the hotel.

The implementation of this design variation would:

- Adversely affect the existing flora and fauna by creating a new alignment.
- Create a barrier for the animals that migrate across the highway.
- Visually impair the view of the Llano site
- Relocate State Route 138 from its historic setting within the Llano del Rio Cooperative Colony Site

2.1.4 Design Variation D: Avenue V, Fort Tejon and Avenue V-8

This variation involves all of the features of Alternative 1; however, near the community of Littlerock a new alignment will be constructed to the south of the existing alignment. At 70th Street East, this

alignment will veer south towards Avenue V and then continue along Avenue V to 82nd Street. At 82nd Street, the alignment will veer further to the south to continue along Fort Tejon Road and will then traverse further east along Avenue V-8 until it rejoins the existing highway at the intersection of 116th Street East and State Route138 (PM 58.67, KP 94.52).

The implementation of this design variation would:

- Adversely impact relatively undisturbed native vegetation.
- Reduce and fragment habitat.
- Create barriers to wildlife movement throughout the area impacted.
- Disrupt the economic life of the three rural communities (Littlerock, Pearblossom, and Llano) by diverting traffic from the businesses along the existing highway.
- Require substantial new right-of-way
- Substantial number of displacements

2.1.5 Design Variation E: Avenue V

This alternative involves all of the features of Alternative 1; however, near the community of Littlerock a new alignment will be constructed to the south of the existing alignment. At 70th Street East, this alignment will veer south towards Avenue V and then continue along Avenue V until it rejoins the existing highway at the intersection of Avenue V and State Route 138 (PM 57.94, KP 93.34).

This alternative is similar to Littlerock Avoidance Alternative D mentioned above and will have the same impacts to relatively undisturbed native vegetation due to constructing a new facility away from the existing roadway.

2.1.6 Attainment of Project Goals

Alternative 1 design variation B attains the project goals and objectives as described below.

Goal: *Improve safety*

This alternative would meet the project goal for improving safety. The addition of another lane in each direction of traffic flow would improve the level of service for the highway by decreasing congestion and eliminate the need for vehicles to cross over the median to pass thereby reducing the number of cross-median accidents. The elevation of the profile would eliminate the rolling profile, eliminate floodwater from crossing the roadway and improve the sight distance. Curve corrections would bring the existing conditions up to the latest standard design. This alternative would increase the clear recovery zone by a minimum of 29.5 ft (9 m) and relocate power poles outside the clear recovery zone. Also this alternative would provide traversable side slopes with a minimum slope of 1:6.

Goal: *Facilitate the efficient flow of goods and services through this area*

This alternative would satisfy the goal of facilitating the efficient movement of goods and services through the area. This alternative would provide an improved route between Eastern Los Angeles County and Western San Bernardino County and Southern Kern County. This alternative would complete the planned integrated regional transportation network between San Bernardino County and the Eastern Los Angeles County.

Goal: *Conform to state, regional, and local plans and policies*

This alternative would comply with state, regional, and local plans and policies. The alternative is consistent with the assumptions for the State Transportation Improvement Plan and with the Regional Transportation Improvement Plan by meeting the approved facility location and type which would be a 4-lane facility. This alternative would conform to the Air Quality Management Plan (AQMP) by reducing emissions in the South Coast Air Basin by providing components of the AQMP in the State Route 138 corridor.

2.2 Other Alternatives Considered

2.2.1 Alternative 2: Building of Freeway

This alternative consisted of developing a freeway in the State Route 138 corridor. In the Project Study Report that was completed in 1992 it was one of the alternatives considered. It stated that the continuing intense development in the Antelope Valley would require development of a freeway by the year 2010.

This alternative was withdrawn from consideration at this time as it would not address the safety and operational problems of the existing highway and funding is not available. It is also currently inconsistent with the assumptions for the State Transportation Improvement Plan and with the Regional Transportation Improvement Plan.

2.2.2 Alternative 3: Transportation System Management (TSM)

At this time the project area does not meet the criteria for a Transportation System Management program. The project area is located in a unincorporated/rural area of Los Angeles County with the population below the 200,000 level that would make it eligible.

A TSM program would not satisfy the purpose and need of this project to improve safety, facilitate the movement of people and goods and comply with local, regional and state plans and policies. Therefore this alternative was eliminated from further consideration.

2.2.3 Alternative 4: Widening along the existing highway through Pearblossom

This alternative proposed to widen both sides of the highway through the community of Pearblossom. During preliminary design and environmental studies it was found that there is a significant concentration of commercial, residential property and an U.S. post office on the south side of the highway. This alternative would have substantial impacts to the community of Pearblossom by eliminating the center of the town.

2.2.4 Alternative 5: No Action

This alternative retains the existing roadway conditions. It has the following drawbacks:

- It is not consistent with the long-term objective of reducing congestion and improving the overall operation and safety for State Route 138.
- It would not provide sufficient capacity for projected 2025 traffic volumes.
- It would not improve safety conditions or reduce the number of accidents and fatalities.
- It would not facilitate the efficient movement of goods and services through the area.
- It would not complete the planned integrated regional transportation network between San Bernardino County and the Eastern Los Angeles County.

- It would be inconsistent with the 1990 STIP that allotted funds for Passing Lanes, Widen Bridge, and Channelization.
- It would not conform to the Air Quality Management Plan (AQMP)

2.3 Current Status of the Project

The California Highway Commission adopted State Route138 as a State Highway in June 1950. Two projects were programmed in the 1998 State Transportation Improvement Program (STIP) for capital cost of 42.503 million-dollars to widen 2 lanes to 4 lanes, between Avenue T and 165th Street East. These projects are in the 1998 STIP and are described below:

Table 9 State Transportation Implementation Plan

STIP Number	Limit	Project Description
(A) 0694Q	PM 51.6 (KP 83.04)/60.2 (KP 96.88)	Near Palmdale. Avenue T to Longview Road Widen from 2 lanes to 4 lanes Capital Cost: $19,766,000
(B) 0693J	PM 60.2 (KP 96.88)/63.7 (KP 102.51)	Near Pearblossom. Longview Road to 165th Street East. Widen from 2 lanes to 4 lanes Capital Cost; $22,740,000

Source: Project Nomination Fact Sheet 1998

Three other projects were programmed in the Interregional Transportation Improvement program (ITIP) for Design and Environmental Document (ED) support cost of 6.57 million dollars to widen 2 lanes to 4 lanes, between 165th Street East and the Junction of State Route 18/138. Limits of these projects and their funding are:

- 165th Street East to Avenue W- allocated $1.58 million to complete the design and ED
- Avenue W to 199th Street- allocated $2.275 million to complete the design and ED
- 199th Street to Junction 18- allocated $2.715 million to complete the design and ED

2.4 Status of Other Projects or Proposals In The Area

In October 1998 the State Route 138 Safety Corridor Task Force was announced officially to the public at the Palmdale City Hall. The group is a multi-agency task force designed to reduce the number of people killed and injured in traffic related accidents on State Route 138 between the western City limits of Palmdale from State Route 14 into San Bernardino County till it reaches Interstate 15. Task Force involvement comes from elected officials from local and state levels, representatives from state, regional and local government agencies and the private sector. The objective of the Safety Task Force is to bring together various disciplines to study the accidents in the corridor and to find solutions related to safety. Various issues arouse from the scoping meeting and were addressed by the safety corridor task force such as stoplights, speed zone, and other operational improvement concerns. On July 23, 1999 Senate Bill 155 passed and in chapter 169 it stated that State Route 138 would be classified as a Safety-Enhancement double fine zone which represents a legislative concern for safety on this highway.

The following highlights some of the traffic and engineering improvements completed by Caltrans along State Route 138 since its designation as a Safety Corridor in September 1998.

- Increased the number of speed limit signs along Palmdale Boulevard (Route 14 to Ave S). (Completed: Nov 99)
- Installed safety corridor signs (Ave T to San Bernardino County Line). (Completed: Mar 99)
- Installed additional speed limit signs in Littlerock. (Completed: Nov 98)
- Refurbished faded pavement markings and limit lines on cross streets within communities of Littlerock and Pearblossom. (Completed: Dec 98)
- Installed oversize Stop Signs (48 in, 1.22 m) on the 96th St East and 165th St East intersections. (Completed: Nov 98)
- Replaced faded school area speed zone signs in Littlerock. (Completed: Sep 98)
- Installed No Stopping Anytime sign in front of elementary school in Littlerock. (Completed: Oct 99)
- Installed reduced speed zone ahead sign east of Littlerock. (Completed: Jun 99)
- Removed passing zone on bridge west of 96th St East. (Completed: May 99)
- Relocated obscured stop sign at 106th St East. (Completed: Dec 98)
- Replaced faded side road warning sign west of Longview Rd. (Completed: Sep 98)
- Installed signing and striping for aerial speed zone enforcement between Pearblossom and Llano). (Completed: Dec 98)
- Installed larger Narrow Bridge signs (48 in., 1.22 m) for approaches to bridge at Big Rock Wash. (Completed: Dec 98)
- Replaced faded crossroad warning signs for 165th St East. (Completed: Sep 98)
- Restriped edgeline for eastbound approach to 165th St East. (Completed: Nov 98)
- Removed excessive sand accumulated on roadway at vicinity of 165th St East. (Completed: Mar 99)
- Restriped faded centerline and replaced missing pavement markers between 165th St East and the junction with Route 18. (Completed: May 99)
- Replaced faded stop sign at 175th St East. (Completed: Dec 98)
- Removed all 55-mph advisory speed signs on all curve-warning signs between Avenue T and the San Bernardino County Line. (Completed: Feb 99)
- Installed curve warning chevrons for westbound approach to Avenue W. (Completed: Nov 98)
- Relocated westbound curve warning sign at Avenue W. (Completed: May 99)
- Extend double yellow centerline striping east of Avenue W. (Completed: May 99)
- Removed 9 passing zones between the junction with Route 18 and the San Bernardino County Line. (Completed: Mar 99)
- Installed double fine zone signs between Avenue T and the San Bernardino County Line. (Completed: Dec 99)
- Minor project to construct a soft median barrier (median rumble strips, pavement markers, and centerline striping changes) from approximately one mile west of Big Rock Wash to 1500' east of Ave W. (Completed: April 2000)

The following lists some of Caltrans proposed Interim Projects:

- Initiate a project to install left turn pockets at 96th Street East. (Construction will start in Summer of 2001)
- Initiate a project to raise the profile of the roadway approaching the Big Rock Wash Twin Bridges. (Construction will start in Summer of 2001)

- Initiate a project to install left turn pocket at 175th Street East. (Construction will start in Summer of 2001)
- Initiate a project to install standard right turn pocket at 165th Street East. (Construction will start in Summer of 2001)
- Install new detector loops at Division St. (Permit in review)
- Resurface pavement at 106th St East / Hampel Ave (Permit in review)
- Planned development at SE corner of Avenue S impacting State Route 138 from Avenue S to Fort Tejon Road. (IGR/CEQA review in progress)
- Unresolved parking issues along State Route 138 within the Communities of Littlerock and Pearblossom. (Under investigation)
- Local advertising signs creating a potential conflict with regulatory signs on State Route 138 within the Community of Littlerock. (Under investigation)
- Update existing Daytime Headlight Zone

California Highway Patrol (CHP)

- Increased the number of CHP Officers on patrol (with grant through end of 2000)
- Implemented Aircraft Enforcement
- Increased Radar Units
- Implemented Community Awareness Programs

As a member of the "Highway 138 Safety Task Force Committee" which consists of the California Highway Patrol, County of Los Angeles, Local cities and private citizens, Caltrans continues to seek ways to make the highway safer and better.

Caltrans District 8 (San Bernardino and Riverside Counties) have begun work on the environmental document that would increase the number of lanes from 2 lanes to 4 lanes with a median from Interstate 15 in San Bernardino County to the Junction of 138/18 in Los Angeles County.

3.0 Affected Environment

3.1 Topography

The proposed project will occur in the Southern California northeastern portion of the Mojave Desert region in the Antelope Valley. The area ranges in altitude from 2450 ft (742 m) to 3200 ft (975 m) with the surrounding mountain rising up to 4000 ft (1211 m). The San Gabriel Mountains binds the region to the north and the Sierra Pelona Mountains on the Southwest. The topography varies from flat with occasional drainage's and sand dunes on the valley floor to steep foothill mountain areas on the south. The San Andreas Fault transverses the project limits parallel and just north of the mountains. The area surrounding State Route 138 is a flat terrain.

3.2 Geology and Soils

The project site is located northerly of the San Bernardino Mountains. The geologic profile situated beneath State Route 138 is composed of three types of strata. The surface stratum being alluvium and older alluvium, underlying the alluvium are the Punchbowl Formation of Cajon Valley (Nonmarine arkosic conglomerate which is usually derived from gneiss and sandstone), and the basement rock formation being metamorphic rock of gneiss, which locally contains undeformed to slightly deformed plutonic rocks. Based on data from geologic maps and the results of a field review, the soils in the upper stratum are identified as an alluvium fan composed of sand, gravel, cobbles and boulders.

In Palmdale consolidated rocks make up the mountains and rocky buttes while alluvial soils are found on streambeds and the valley floor. Pelona schist underlies most of the mountainous portions of Palmdale. Situated beneath the alluvial soil lies the same hard rocks found in the mountain areas.

Older alluvium deposits consist of sand, gravel silt, and boulders characterized by their ability to store and yield water. Younger alluvium deposits make up the alluvial fans found at the base of the San Gabriel Mountains.

3.2.1 Faults

The project site is situated in an active seismic region that is located less than 3 miles (3.82 km) northerly of the San Andreas Fault Zone. The San Andreas Fault is the boundary where the North American plate and the Pacific plate meet. The source of seismic activity is related to the tectonic activity of the right lateral movement of the Pacific Plate relative to the North American Plate. Relative movement along these plates boundaries is what causes earthquakes in this area. The San Andreas Fault extends over 600 miles (965.4 km) from the Salton Sea, northwest toward the Pacific Ocean at Point Arena. The San Andreas Fault system has several fault traces branch off the primary fault.

Active branches of the San Andreas Fault system in the Palmdale area are the Cemetery Fault, the Nadeau Fault, and the Littlerock Fault. Any movement from the San Andreas Fault may activate one or all of the subsidiary faults.

3.2.2 Mining

One of the predominant uses of land in the City of Palmdale and surrounding areas involves mining, which consists of sand and gravel operations. There are six mining operations located along the Little Rock Wash on the eastern edge of the City. In addition, there are six concrete batching operations, three asphalt batching operations and one concrete pipe manufacturer located within the Little Rock Wash area.

3.3 Water Resources

3.3.1 Hydrology

The largest waterways within the project area include Little Rock Wash, Big Rock Wash and the California Aqueduct which run generally north and northeast across the project lands toward the Rosamond and Rogers dry lakes. Thunderstorms are common, but washes are dry during much of the year. The California Aqueduct is channelized and flows year round. The Antelope Valley is a natural inland basin within the southwestern Mojave Desert. The groundwater system consists of an upper and lower aquifer covering 900 square miles (1448 km) separated vertically by silt and clay deposits from when an inland lake covered the valley that is also called a lacustrine deposit. The uplifting of the San Gabriel and the Sierra Pelona Mountain Ranges, the Tehachapi Mountains, and the Soleda Mountain upland created the aquifers in the Antelope Valley. The upper aquifer overlies the lacustrine deposits and supplies all water pumped from wells in the Antelope Valley. The lower aquifer underlies these deposits. Water moves downward from the upper aquifer to the lower aquifer on the western and southern limits of the lacustrine deposits.

Although a constant water flow within the California Aqueduct is maintained year-round, little riparian vegetation was noted in close proximity to the concrete lined channel. Little riparian vegetation was also noted at the Big Rock Wash Bridge area as well. In contrast, the Little Rock Wash area contains an extensive, diverse, dense riparian habitat.

Big Rock Wash is an intermittent stream that flows between the Angeles National Forest and the Antelope Valley. Near Highway 138, the wash is mostly unvegetated, except for limited alluvial scrub vegetation. Big Rock contains two channels separated by a 200-foot (61.38 m) island. Levees constructed from alluvial material line the wash immediately upstream and downstream of the bridges.

3.3.2 Water Quality

The chemical quality of the groundwater in the Antelope Valley Basin is generally satisfactory for domestic use and irrigation, as well as for most commercial and industrial uses. The levels of total dissolved solids generally range from 200 to 800 parts per million with concentrations of up to 2,600 parts per million near Rosamond and Rogers Playa. Although present quality is satisfactory, there is a slow trend toward reduced groundwater quality, due to increased urban run-off, septic tank failures in the San Gabriel watershed, declining water tables, and an extensive perched water condition in the Lancaster sub-unit of the Antelope Valley Basin. (This sub-unit presently supplies the majority of the pumped water supply in the Basin). Particular water quality problems exist in the Littlerock area. Past nitrate readings in Littlerock Creek Irrigation District (LCID) wells have indicated that such levels will exceed State standards.

3.3.3 Flood Hazards

In the vicinity of State Route 138 there are two floodplain areas, which are of concern. The areas are located at Littlerock Creek Bridge #52-303 (PM 53.57), Big Rock Wash Bridge #53-313 (PM 63.00, KP 101.38) and Big Rock Wash Bridge #53-314 (PM 63.04, KP 101.45).

Large areas of the Antelope Valley are subject to flooding due to weather conditions in the San Gabriel and Sierra Pelona Mountains. In the winter season the rainfall is concentrated and encourages run-off from exposed, highly fractured rocks. The topography of this area results in high velocity erosive flows due to steep canyon slopes and channel gradients which concentrate the rain fall. The flows quickly satisfy soil moisture deficiencies and then spread across alluvial deposits in new channels and/or sheet flow. Flooding in the Antelope Valley is further produced by impervious silt, clay and fine sand located on the desert floor.

Urban development reduces the total ground absorption area by creating impermeable surfaces such as pavement and streets. Storm runoff, increased by the presence of impermeable surfaces, flows from developed areas, contributing to street flooding. The amount and frequency of rain is variable, and although floodwaters may be diverted, the lack of a completed regional drainage system will continue to result in local flooding problems. Rainfall in the area is often in the form of thunderstorms and other fast moving, relatively intense storms, which may cause flash floods. There is a tendency for flash floods in the project area. It is difficult to forecast the force and strength of flash floods and the amount of rain they will produce, so there may be occasional occurrences of floodwater washing over the roadway. Runoff may be anticipated from storm water.

3.3.4 Climate

The climate of the Antelope Valley is dominated by the region's Pacific high-pressure system, which contributes to the area's hot, dry summers and relatively mild winters. The climate is characterized by its wide fluctuation in temperature between day and night. Temperatures in the area average a low of 71 F and a high of 95 F in summer months. During the winter the average low is 36 F and the average high is 58 F. The average annual precipitation is 8 inches in the antelope valley. The climate is characterized by spring being typically mild with cool nights and a tapering of rain showers; the summer months being typically dry, warm-hot, and often breezy; fall being mild, windy and dry with mild days and cool nights; and winter being cold, breezy and moist to wet.

3.4 Biological Resources

3.4.1 Vegetation

In the Antelope Valley there are Four (4) major zones that have distinct vegetative associations. The valley floor zone, the bajadas and plains, the floodplains and drainage courses, and the upper mountain slope zone. The valley floor extends to about 2,400 feet (731.5 m) and is a zone consisting of alkaline playa lakebeds, with compact clay soils and very little vegetation other than saltbushes (*Atriplex spp*.) and other salt tolerant species. The bajadas and plains are gently sloping alluvial fans extending from the nearby mountain ranges (below 4,000 feet, 1219.2 m) to the floor of the basin. Species associated with these well drained areas include creosote bush *(Larrea tridentata*), cheesebush (*Hymenoclea salsola*), burrobrush (*Franseria dumosa*), and Mormon tea (*Ephedra torreyana*). Cacti species (*Opuntia and Cereus spp*.) are more common in the drier valley areas and the most conspicuous tree of the bajadas is the Joshua Tree.

The types of vegetation found in the floodplains and concrete lined channels, which would be consistent with the Big Rock and Little Rock creeks, are clumps of desert willow or catalpa (*Chilopsis linearis*) and acacia (*Acacia spp*.) Other species found in this area include: bittterbrush (*Parishia glabulosa*), rabbitbrush (*Chrysothammus spp*.) , and goldenbush (*Happlopappus copperii*).

The vegetation in the higher valley areas consists of clumps of scrub juniper or California Junipers (*Juniperus califonica*) present in the Joshua tree woodland areas in the upper elevations. The vegetation in the project area can be classified into five (5) plant communities; the Mojave Creosote Bush Scrub, Mojave Mixed Woody Scrub, Joshua Tree Woodland, Mojave Wash Scrub and Ruderal plant communities.

The following is a description of natural communities and associated plant species observed within the vicinity of the proposed project.

Mojave Creosote Bush Scrub: This plant community is dominant on well-drained secondary soils in relatively flat areas of the western Mojave Desert. Although this plant community is rarely adjacent to developed areas, it is found in the project vicinity. Of the most common species of this plant community, creosote, with sub-dominant species that included lycium (*Lycium spp.*), brittle bush (*Encelia farinosa*), and Mormon tea are present in the vicinity of the proposed project.

Mojave Mixed Woody Scrub: The Mojave Mixed Woody Scrub occurs in areas which are characterized by steep overly-drained soils with extremely low water holding capacity. These sites are scattered throughout the project area. Of the most common species of this plant community, rabbitbrush (*Chrysothamnus nauseosus*), saltbush (*Atriplex spp.*), phacelia (*Phacelia spp*.), and Joshua tree (*Yucca brevifolia*) are present in the vicinity of the proposed project.

Joshua Tree Woodland: Joshua Tree Woodland communities are characterized by higher densities of Joshua Trees and are generally found between higher elevation Juniper Woodland communities and lower elevation Mojave Creosote Bush Scrub Communities. Joshua Tree Woodland communities are interspersed throughout the project area. The most common species of this plant community found in this area are Lycium, cactus (*Opuntia spp*.) and California junipers (*Juniperus californica*).

Mojave Wash Scrub: This type of community is found in the sandy desert washes of the bajadas. Of the most common species of the Mojave Wash Scrub community, saltbush (*Atriplex sp*.), and rabbitbrush (*Chrysothamnus nauseosus)* are present in the vicinity of the proposed project.

Ruderal: Ruderal plant communities are characterized by extremely weedy and substantially degraded habitats that are unable too effectively retard soil erosion and runoff. Ruderal plant communities are present within the project area in sections disturbed by agricultural activities and other developments. Of the most common species of this plant community, several different species of mustards, nonnative grasses and forbs are present in the vicinity of the proposed project, which are considered invasive species.

Table 10 Plants Observed in the Project Vicinity.

Scientific Name	Common Name
Acacia spp.	Acacia
Ambrosia sp.	Ragweed
Amsinckia tessellata	Fiddleneck
Argemone munita	Prickley Poppy
Aster scopulorum	Aster
Asteraceae family	Ambrosia
Atriplex canesces	Four-Wing Saltbush
Atriplex sp.	Saltbush
Baccharis salicifolia	Mulefat
Brassicaceae family	Mustard
Brodiaea pulchella, var. pauciflora	Blue dicks
Bromus rubens	Red Brome
Bromus tectorum	Cheatgrass
Calystegia peirsonii	Pierson's morning glory
Camissionia micrantha	Miniature Sun Cup
Camissonia campestris	Mojave Sun Cup
Canbya candida	Pygmy poppy
Chaenactis fremontii	Pincushion Flower
Chamaesyce albomarginata	Rattlesnake Weed
Chilopsis linearis	Desert willow
Chorizanthe sp.	Spineflower
Chrysothamnus nauseosus	Rabbitbrush
Encelia farinosa	Brittle Bush
Ephedra sp.	Mormon Tea
Eriastrum sp.	Woolstar
Erigonum sp.	Buckwheat
Eriodictyon trichocalyx	Yerba Santa
Eriophyluum confertiflorum	Golden Yarrow
Erodium texanum	Common filaree
Franseria dumosa	Burro-weed
Gilia sp.	Gilia
Glabrata californica	
Haplopappus cooperi	Copper Goldenbush
Hemizonia	Tarweed
Hymenoclea salsola	Burrowbrush
Hymenoclea salsola	Cheese Bush
Juniperus californica	California Juniper
Krascheninnikovia lanata	Winter Fat
Larrea tridentata	Creosote Bush
Lasthenia chrysostoma	Goldfields
Lepidium virginicum,var. robinsonii	Robinson's pepper grass
Linanthus parryae	Parry Gilia

Scientific Name	Common Name
Lycium californicum	Boxthorn
Malacothrix glabrata	Desert Dandelion
Marah macrocarpus	Wild Cucumber
Mirabilis sp.	Four O'Clocks
Myosotis sp.	White Forget-Me-Not
Oenothera deltoides	Dune Primrose
Opuntia basilaris, var. brachyclada	Beavertail Cactus/Short-joint beavertail
Opuntia bigelovii	Jumping Cholla
Opuntia bigelovii	Teddy-Bear Cholla
Opuntia spp.	Prickly Pear
Parishia glabulosa	Bitterbrush
Phacelia distans	Distant Phaceila
Phacelia tanacetifolia	Lady Phacelia
Phacelia vallis-mortae	Death Valley Scorpionweed
Plagiobothrys arizonicus	Popcorn Flower
Poaceae family	Brome Grasses/ Scale broom
Poaceae family	Rice Grass and Others
Rumus	
Salazaria mexicana	Paperbag Bush/ Bladder sage
Salix sp.	Willow
Salsola iberica	Russian Thistle
Solanaceae family	Datura
Stipa sp.	Needlegrass
Tamarix chinensis	Tamarix
Yucca brevifolia	Joshua Tree
Yucca sp.	Yucca
	Anderson Thom
	Bean Flower
	Spencer Primrose
	Yellow Mist

Source: Caltrans District 7: Natural Environment Study January 2000

Sensitive species are flora and fauna protected under state and/or federal endangered species acts. The California Department of Fish and Game (CDFG), and the US Fish and Wildlife Service can also identify sensitive species. In the case of plant species the California Native Plant Society (CNPS) classifies sensitive plants. In the surrounding plant communities there have been a number of sensitive species identified. A list of sensitive species follows:

Sensitive Species

- Pierson's morning glory (*Calystegia peirsonii*)- Federal species of concern and CNPS species of limited distribution.

- Pygmy poppy (*Canbya candida*)- CNPS species that is rare and endangered in California and elsewhere.
- Robinson's pepper grass (*Lepidium virginicum, var. robinsonii*)-CNPS species that is rare and endangered in California and elsewhere.
- Short-joint beavertail cactus (*Opuntia basilaris, var. brachyclada*)- Federal species of concern and CNPS species that is rare and in California and elsewhere.

3.4.2 Wildlife

The proposed project widening of State Route138 is going to occur in the southwestern portion of the Mojave Desert. This area of the Mojave Desert is known for its extreme temperature and precipitation. Even with these extreme conditions in the Mojave Desert there is a diverse range of animal life that the local flora can support such as reptiles, birds, invertebrates, and mammals.

The species of animals that may be within the general project vicinity based on either present or historical records include animals such as desert cottontails, panamit kangaroo rats, desert horned lizards, Desert tortoise, Burrowing owl, and Mohave ground squirrel. The Federal Endangered Species Act of 1973 (16 U.S.C. 1531-1543) provides for the conservation of endangered and threatened species and the ecosystems upon which they depend. Some of the species of wildlife in this area are considered to be "sensitive" species that have been identified and/or protected by the U.S. Fish and Wildlife Service (USFWS) and/or the California Department of Fish and game (CDFG). A list of sensitive species follows:

Sensitive Species

The following sensitive species may be present in the vicinity of the proposed project.

- Burrowing owl (*Athene cunicularia*) - Federal species of concern/State species of special concern.
- California horned lizard (*Phrynosoma coronatum frontale*) - Federal species of concern/State species of special concern.
- Desert tortoise (*Gopherus agassizii*) – Federal threatened species/State endangered.
- Le Contes thrasher (*Toxostoma lecontei*) - State species of special concern.
- Mohave ground squirrel (*Spermophilus mohavensis*) – State threatened species/Federal Category 2 (threat and/or distribution are insufficient to support listing).
- Prairie falcon (*Falco mexicanus*) - State species of special concern.
- San Diego horned lizard (*Phrynosoma coronatum blainvillei*)- Federal species of concern/State species of special concern.
- San Joaquin pocket mouse (*Perognathus inornatus inonatus*)-Federal species of concern

3.4.3 Wildlife Corridors

In the area of the proposed project there are wildlife corridors that provide a link between wildlife habitats. The most important areas for concern are the corridors that are located at Little Rock Wash, and Big Rock Wash. The County of Los Angeles in the Antelope Valley Areawide General Plan identified the Wildlife Corridors and Significant Ecological Areas (SEA's) as:

Desert washes: desert washes areas are critical wildlife habitat and migration corridors: these areas have greater species diversity and the corridors function as an effective means of seed dispersal for many desert plants, and as such, are important to the stability of many of the desert ecosystems.

According to the 1986 General Plan, Little Rock Wash is the largest and least disturbed habitat of this type in Los Angeles County.

Desert-Montane Transect: The Desert-Montane transect is located within the project area along the eastern edge of Los Angeles County. This is an important transitional area between the Mojave Desert and the northern slopes of the San Gabriel Mountains. The mix of desert and Montane habitats make this area one of the most diverse in the county, as well as one of the largest undisturbed areas outside of the Angeles National Forest.

Desert Buttes: Although these buttes are north of the State Route 138 corridor, it is possible that wildlife may migrate through the State Route 138 study area to/from the buttes, e.g., Little Rock Wash and Big Rock Wash represent major wildlife corridors in this area. The Buttes are characterized as having substantially more biotic diversity relative to the surrounding areas and are ecologically valuable habitats to many desert-dwelling species. Most butte areas are potential habitat for the Mohave ground squirrel (*Spermophilus mohavensis*), a species protected by the state.

3.4.4 Wetlands

A wetland delineation and assessment for the areas adjacent to the current alignment of State Route 138 in Los Angles County were prepared for this project. Previous surveys within the project area were conducted by windshield surveys and walking where the larger drainages crossed under State Route 138. This background knowledge was used to determine which drainage's needed further study. A Federal wetland is defined by meeting three criteria (hydrology, hydric soils, and hydrophytic vegetation) set by the U.S. Army Corps of Engineers and Environmental Protection Agency. A State wetland is defined by meeting one of the three criteria. The majority of the culverts in the project area do not meet the three criteria. Many of the culverts may meet one of the three criteria, typically the hydrology criteria, which would classify them as a state wetland, but would not be classified as a Federal wetland.

Within the proposed project area along State Route 138, three locations were chosen for further investigation to determine if the three criteria for a Federal wetland were present. These sites were chosen because the conditions indicate the possibility of meeting the three criteria mentioned. The three locations of the wetland delineation's included were State Route 138 crosses Little Rock Wash, Big Rock Wash, and near the State Route 138 and State Route 18 junction.

3.5 Air Quality Characteristics

The Antelope Valley lies within the Southeast Desert Air Basin (SEDAB). The Colorado River binds the air basin to the east, the crest of the San Bernardino, San Gabriel, and San Jacinto Mountains to the south and west, and the northern Kern County boundary to the north.

In the Antelope Valley the SEDAB air mass interacts with the air mass from the South Coast Air Basin which contains high levels of emissions and reacted air pollutants that originate from vehicular, commercial and industrial sources in Los Angeles, Orange, Riverside and San Bernardino counties. During the summer the polluted air from the South Coast Air Basin moves north into the Antelope Valley with emissions that exceed the National Ambient Air Quality Standards (NAAQS). Different physical factors can affect the air quality on any given day. The physical factors that can affect air quality are topography, wind patterns, average wind speeds and the frequency with which temperature inversions occur in the affected area.

The State and Federal governments have established levels for a number of pollutants to protect public health and well being. The State and Federal governments have identified four pollutants that affect the Antelope Valley, ozone, Carbon Monoxide, Nitrogen Oxides and Particulate Matter which is small particulates less than 10-microns in size (PM_{10}) and they are being monitored at the Lancaster station that is part of the South Coast Air Quality Management District.

The adopted strategies and methods for enhancing the county's air quality are listed in the Air Quality Management Plan. These measures should be implemented through conditions of approval of discretionary entitlements and the goals, policies and programs of the General Plan.

Ozone

The surrounding communities in the Antelope Valley exceeded the State Ambient Air Quality Standards for ozone. The State standard for ozone is 0.09 parts per million (ppm) for a period of one hour and the National standard is 0.12 ppm for a period of 1 hour. Table 11 shows the last three years and the number of days with the Maximum ppm the standards have been exceeded.

Table 11 Highest 4 Daily Maximum Hourly Ozone Measurements & Number of Days above the Hourly Standards at Lancaster-W Pondera Street parts per million (ppm)

	1997		1998		1999	
High	Jun 18	0.123	Jul 16	0.164	Jun 29	0.097
2nd High	May 30	0.118	Jun 29	0.139	Jun 30	0.093
3rd High	Aug 6	0.112	Jul 18	0.139	Jun 18	0.089
4th High	Aug 7	0.107	Jul 17	0.137	May 8	0.087
*Days > State Standard		14		2		1
*Days > Nat'l Standard		0		8		0
**Year Coverage		67		98		61

Source: California Air Resource Board

* The number of days at least one measurement was greater than the level of the state hourly standard (0.09 parts per million) or the national hourly standard (0.12 parts per million). The number of days above the standard is not necessarily the number of violations of the standard for the year.

** Year Coverage is an indicator of how extensive monitoring was during the time of year when high pollutant concentrations are expected. Year coverage ranges from 0 to 100. For example, a Year Coverage of 75 indicates that monitoring occurred 75% of the time when high pollutant concentrations are expected. For the current year, Year Coverage will be 0 at the beginning of the year and will increase as the data for the year become available.

An area is in nonattainment of the national ozone standard if a maximum hourly concentration exceeds the health-based standard of 0.12 parts per million (12 parts per hundred million) on more than three days in the past three years. A concentration greater than 0.12 parts per million is called an "adverse level."

Figure 7 shows the nonattainment areas for California

Carbon Monoxide

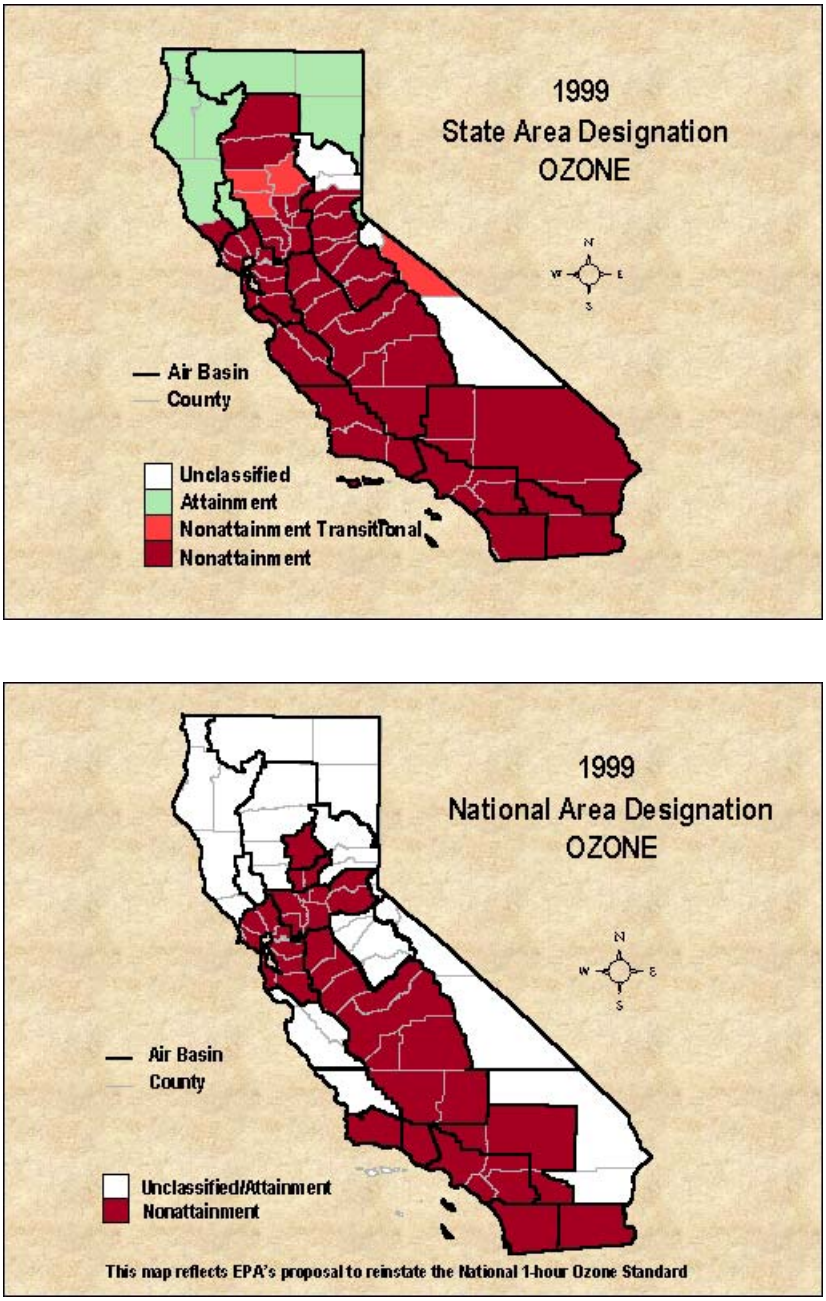
Carbon Monoxide levels in the Antelope Valley have been below State Ambient Air Quality Standards. Carbon monoxide (CO) gas is formed as the result of incomplete combustion of fuels and waste materials such as gasoline, diesel fuel, wood, and agricultural debris. Mobile sources generate over 80 % of the statewide CO emissions. Diesel-powered, on-road vehicles are small CO

contributors. Stationary and area-wide sources of CO are the same types of fuel combustion sources that also generate NOx . The stationary source contribution to statewide CO is small, due in part to widespread use of natural gas as a fuel and the presence of combustion controls.

The carbon monoxide levels for the past three years are shown in Table 12. Figure 8 shows that the project area is in an attainment for Carbon Monoxide.

Particulate Matter

The levels of Particulate Matter (PM_{10}) have also exceeded the State Ambient Air Quality Standards. The major source of Particulate Matter in the Antelope Valley is due to wind blown dust as a major source of emission. Table 13 has the last three years levels. Figure 9 shows the Statewide and National designation for PM_{10}. The project area is in a state nonattainment area.



Source: California Air Resources Board 1999

FIGURE 7 STATE AND NATIONAL AREA OZONE ATTAINMENT/NONATTAINMENT AREAS

Table 12 Highest 4 Daily Maximum 8-Hour Carbon Monoxide Averages & Number of Days Above the 8-hour Standards at Lancaster-W Pondera Street parts per million (ppm)

	1997		1998		1999	
High	Dec 30	3.99	Dec 30	3.59	Jan 6	5.41
2nd High	Nov 4	3.96	Nov 14	3.56	Jan 2	3.99
3rd High	Dec 27	3.89	Nov 20	3.43	Jan 5	3.91
4th High	Nov 25	3.75	Dec 29	3.14	Jan 4	3.74
*Days > State Standard		0		0		0
*Days > Nat'l Standard		0		0		0
**Year Coverage		100		99		36

Source: California Air Resource Board

* The number of days at least one non-overlapping 8-hour average was greater than the level of the state 8-hour standard (9.0 parts per million) or the national 8-hour standard (9 parts per million). The number of days above the standard is not necessarily the number of violations of the standard for the year.

** Year Coverage is an indicator of how extensive monitoring was during the time of year when high pollutant concentrations are expected. Year coverage ranges from 0 to 100. For example, a Year Coverage of 75 indicates that monitoring occurred 75% of the time when high pollutant concentrations are expected. For the current year, Year Coverage will be 0 at the beginning of the year and will increase as the data for the year become available.

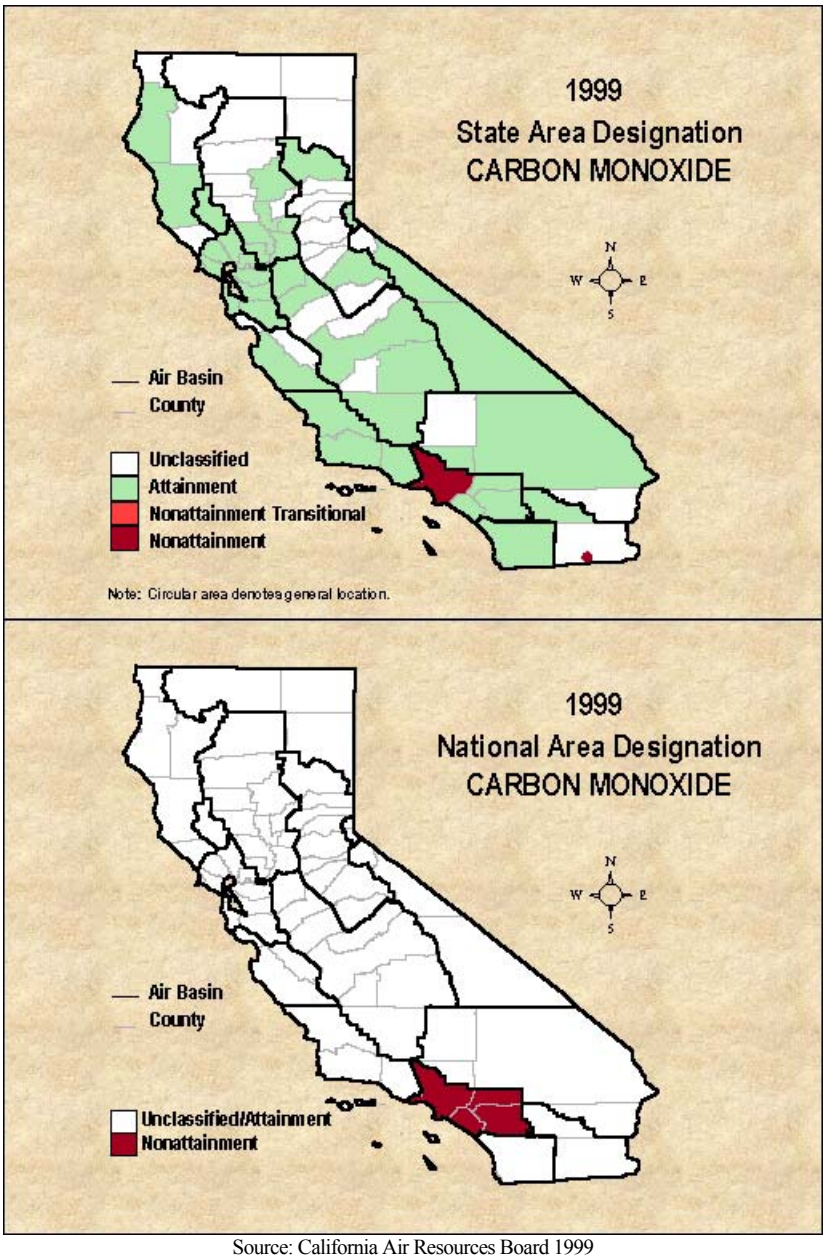
Table 13 Highest 4 Daily PM_{10} Measurements and Annual PM_{10} Statistics At Lancaster-W Pondera Street parts per million (ppm)

	1997		1998		1999	
High	Feb 27	54.0	Dec 31	80.0	Dec 2	85.0
2nd High	May 22	52.0	Apr 27	58.0	Jan 6	51.0
3rd High	Aug 8	46.0	Apr 17	48.0	May 6	44.0
4th High	Feb 15	45.0	Jul 16	46.0	Jun 23	40.0
*Days > State Standard		2		2		1
*Days > Nat'l Standard		0		0		0
**Year Coverage		94		85		26

Source: California Air Resource Board

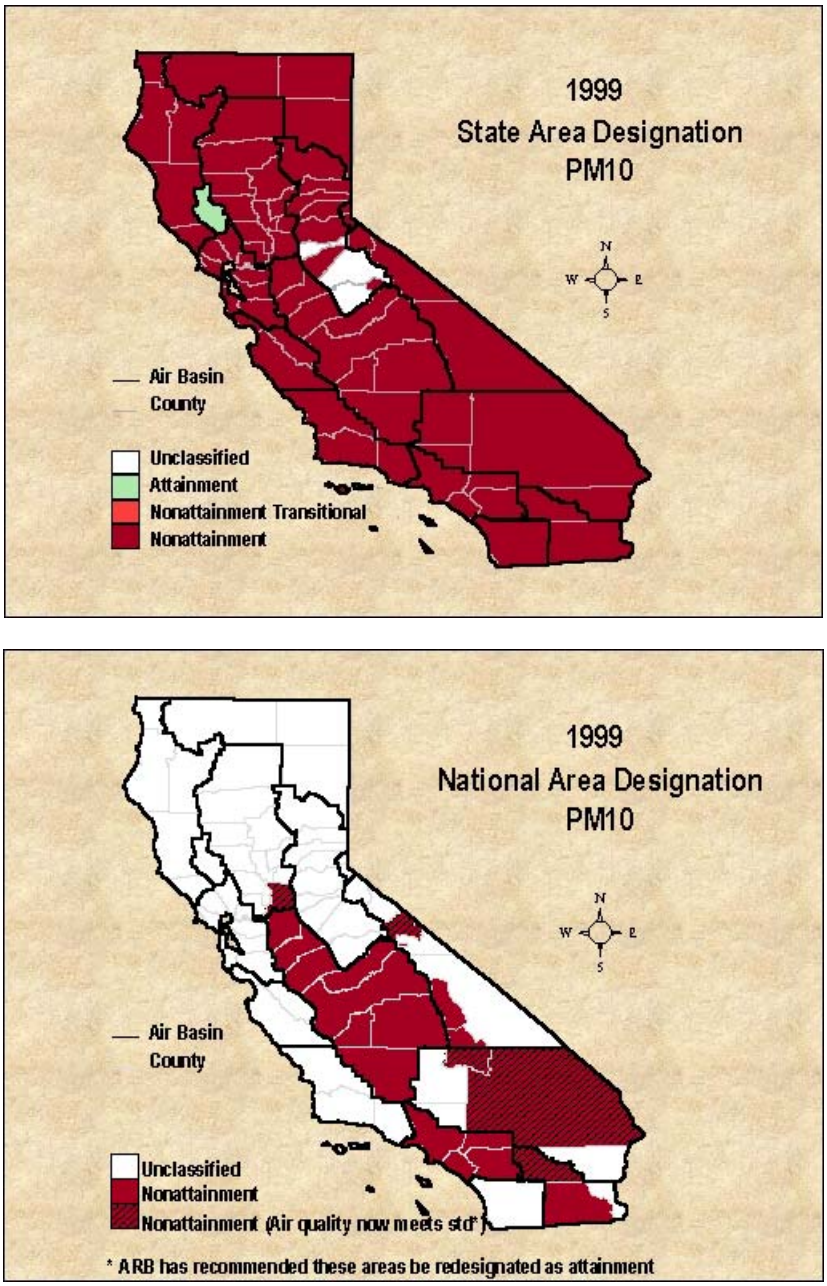
* Measured days are those days that an actual measurement was greater than the level of the state daily standard (50 micrograms per cubic meter) or the national daily standard (150 micrograms per cubic meter). Measurements are typically collected every six days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

** The 3-year statistics include data from the listed year and the two years before the listed year.



Source: California Air Resources Board 1999

FIGURE 8 STATE AND NATIONAL AREA CARBON MONOXIDE ATTAINMENT/NONATTAINMENT AREAS



Source: California Air Resources Board 1999

FIGURE 9 STATE AND NATIONAL AREA PM_{10} ATTAINMENT/NONATTAINMENT AREAS

Nitrogen Dioxide

The levels of Nitrogen Dioxide are below the State and Federal levels. The Nitrogen Dioxide is in attainment level in the project area.

Table 14 Highest 4 Daily Nitrogen Dioxide Measurements and Annual Nitrogen Dioxide Statistics
At Lancaster-W Pondera Street
parts per million (ppm)

	1997		1998		1999	
High	Oct 17	0.071	Nov 16	0.077	Nov 4	0.083
2nd High	Sep 22	0.061	Oct 11	0.069	Jan 11	0.078
3rd High	Mar 17	0.060	Oct 21	0.063	Nov 2	0.074
4th High	Sep 23	0.058	Jan 26	0.059	Nov 5	0.068
*Days > State Standard		0		0		0
*Days > Nat'l Standard		0		0		0
**Year Coverage		89		93		28

Source: California Air Resource Board

* The number of days at least one measurement was greater than the level of the state hourly standard (0.25 parts per million). The number of days above the standard is not necessarily the number of violations of the standard for the year.

** Year Coverage is an indicator of how extensive monitoring was during the time of year when high pollutant concentrations are expected. Year coverage ranges from 0 to 100. For example, a Year Coverage of 75 indicates that monitoring occurred 75% of the time when high pollutant concentrations are expected. For the current year, Year Coverage will be 0 at the beginning of the year and will increase as the data for the year become available.

3.6 Hazardous Waste

3.6.1 Storage Tanks

The Initial Site Assessment found that there are 9 unique locations that include Underground Storage Tanks (UST), leaking underground storage tanks (LUST), and above-ground storage tanks (AST) located along State Route 138. Federal State and local environmental and health regulatory agency records have been checked to see if any known hazardous waste sites are in the vicinity of the project area. The Initial Site Assessment identified four Leaking Underground Storage Tanks (LUST) which are within one-eighth mile of the project right of way. Also in the project vicinity the ISA used the Hazardous Waste and Substance Site List (Cortese List) to identify potential sites. Their findings suggest that there are three listed Cortese sites within one-eight mile (0.2 km) of the project right-of-way, as well as a Resources Conservation and Recovery Act (RCRA) large generator for the project area. The following are sites that were identified for potential hazardous waste.

- Concrete and metal piping remains located on the southwest corner of Four Points
- Valco Transmission 78226 Pearblossom Highway- UST
- C-Bar-B plaza (Littlerock Liquor and Gas), 8063 Pearblossom Highway-UST
- Black Gold Oils Company Station #147, 8157 Pearblossom Highway- LUST/Cortese List, UST
- Pacific Bell, 9550 Pearblossom Highway-RCRA large generator-LUST,AST

- Jerry's Minute Mart, 12515 Pearblossom Highway-LUST/Cortese,UST
- Kwik Tune Lube and Oil , 13100 Pearblossom Highway- UST
- Buchanan Union 76 (Jack's Gas and Mini Mart), 17326 Pearblossom Highway-UST
- Unidentified residential property at Largo Vista Road- Drums, AST

It has also been found that in four areas between Post Mile 59.8 (96.23 km) to 69.5 (11.84 km) there are concentrations of lead located 0.5 (0.15 m) to 1.5 feet (0.46 m) below the surface level that are at a hazardous level. It is estimated that approximately 222 cubic yards of soil at the site are impacted with hazardous concentrations of lead and will require special handling.

3.7 Land Use Setting

The Communities of Littlerock, Pearblossom, Llano and the City of Palmdale are located in the high desert region of Los Angeles County approximately 60 (96.56 km) miles from downtown Los Angeles. The City of Palmdale was incorporated August 24, 1962 and the Communities of Littlerock, Pearblossom and Llano are unincorporated areas of Los Angeles within the Antelope Valley. The project limits encompass an area between the foothills of the San Gabriel and Sierra Pelona Mountains and the Mojave Desert to the north and east.

The land use along State Route 138 varies as you go through the Communities of Littlerock, Pearblossom, Llano and the City of Palmdale. The City of Palmdale has urban residential, non-urban residential, commercial, industrial and open space land use. The land use in the Palmdale area has been focused primarily on the aerospace industry. The city's development pattern has been shaped by the existing constraints to growth within the city's own planning area. To the east, Little Rock Wash forms a natural boundary between urban residential development in Palmdale and rural residential uses in the unincorporated community of Littlerock.. Other established rural Communities in or adjacent to the project area have also indicated their desire to maintain lower densities and rural lifestyles. Also located on State Route 138 in the vicinity of 72nd Street East and 75th Street East (PM 53.95, KP 86.82) and the California Aqueduct and 96th street (PM 56.17, KP 90.39) are agricultural areas that support crops that are located on Prime Farmland.

3.7.1 Housing

The 1990 census shows the number of housing units in the communities that are in the project area. The City of Palmdale had 24,418 housing units. In January 1995, the California Department of Finance's Demographic Research Unit estimated that there were 35,780 housing units in the City of Palmdale. In five years the increase of housing units was 46.5%. The large percentage increase is due to an increase in the number of single-family homes.

Table 15 shows the number of Housing Units located in the communities in the project area.

Table 15 Housing Units for 1990

Dwelling Units	Palmdale	Littlerock	Pearblossom	Llano
Total Dwelling Units	24,418	422	447	543
Single Family Detached	16,293	382	-	-
Person/Household	3.13	3.27	-	-

Source: US Census Bureau 1990

3.7.2 Commercial

In the 1960's, the City of Los Angeles Department of Airports began to acquire landholdings in the Palmdale area to the east and north of the Airport Corridor Specific Plan area totaling approximately 17,500 acres (7082 hectares), for the purpose of developing a second international airport to supplement the increasingly burdened capacities of Los Angeles International Airport (LAX). Plans for the new airport have been discussed, and modified many times over the past few years and the project remains a future potential. A regional airport would require improved ground transportation.

3.7.3 Industrial

Aerospace

Aerospace and related industries dominate the industrial and business sectors of Palmdale. Companies that have their facilities in Palmdale include Northrop Corporation, McDonnell Douglas Corporation and the Lockheed Corporation. Also Rockwell International facilities are located on land that is leased from the Los Angeles City Department of Airports.

Mining

Mining is another industry that is prominent in the Palmdale and surrounding communities. There are sand and gravel mining operations in the City of Palmdale and Little Rock Wash. There are six mining operations located along the Little Rock Wash on the eastern edge of the City. Based on California State Mining and Geology Board Guidelines for Mineral Resource Zones (MRZ) the Palmdale Production-consumption region falls into MRZ-2 category and extends over 37 square miles within the general area of Little Rock Wash. In addition, there are six concrete batching operations, three asphalt batching operations and one concrete pipe manufacturer located within the Little Rock Wash Area.

3.7.4 Farm Land

The Farmland Protection Policy Act (FPPA) protects land that is identified as prime, unique and other farmland of statewide or local importance. Within the project area, prime farmland areas occur along the southern side of State Route 138 in the vicinity of 75th Street East and along the north side of the highway east of 96th Street East. Prime farmland is land that has the best combination of physical and chemical characteristics for producing agricultural crops and may include land currently used as cropland, pastureland, rangeland or forestland. The major crops grown in this area are onions, peaches and carrots. See Figure 10 and 11.

3.8 Socioeconomic Characteristics

3.8.1 Economics

Economic and population growth in the Antelope Valley have rapidly accelerated in the past decade. Southern California Association of Governments (SCAG) predicts high growth rates (approximately 5 % per year) for the Palmdale area with the presumption that aerospace industry activity will increase. There has been extensive growth in population, housing, and employment.

The Communities of Palmdale, Littlerock, Pearblossom and Llano are all situated on State Route 138 in the Antelope Valley. This area historically was dependent on agriculture for its economy but with growing populations and rising water costs the focus has shifted from agriculture towards commercial

and industrial businesses. Palmdale has a history with the aerospace industry. The City of Palmdale is the home for such companies as Northrop Grumman, Boeing and Lockheed Martin. Even with the recession of the early 1990's that affected the aerospace and defense industry. Palmdale has been able to recover with new jobs in the manufacturing field. The community of Littlerock still has active agriculture with the production of such crops as peach, pear, apple and cherry. Palmdale has designated 17,500 acres (7082 hectares) as the Palmdale Regional Airport owned by the City of Los Angeles Department of Airports. Also there are approximately 34% of the Palmdale residents that commute to jobs outside of the Antelope Valley. The majority of these people are employed within the San Fernando Valley or the Los Angeles Basin.

The smaller communities along State Route 138 are supported by a variety of small businesses and also by the traffic that passes along it on its way to the commercial and industrial businesses in more developed areas. The 1999 annual sales tax revenue for the City of Palmdale is $7.5 million dollars.

Table 16 shows the Median Family Income based on the 1990 census.

Table 16 Median Family Income by Community compared to Los Angeles County

Income	Palmdale	Littlerock	Pearblossom	Llano	Los Angeles County
Median	$45,225	$41,912	$45,547	$38,807	39,035
% Below Poverty	8.9%	10.3%	-	-	15.1%

Source: US Census Bureau 1990

Table 17 describes the Labor Market-Industry that is located in the Antelope Valley with a breakdown of the numbers in the workforce.

Table 17 Labor-Market Industry

Occupation	# of Workers
Agriculture	750
Construction	2,740
Finance, Real Estate & Banking	5,434
Government	14,500
Manufacturing	18,800
Mining	809
Services	31,200
Transportation, Communication & Utilities	4,400
Wholesale/Retail Trade	4,400

Source: Greater Antelope Valley Economic Alliance 1999

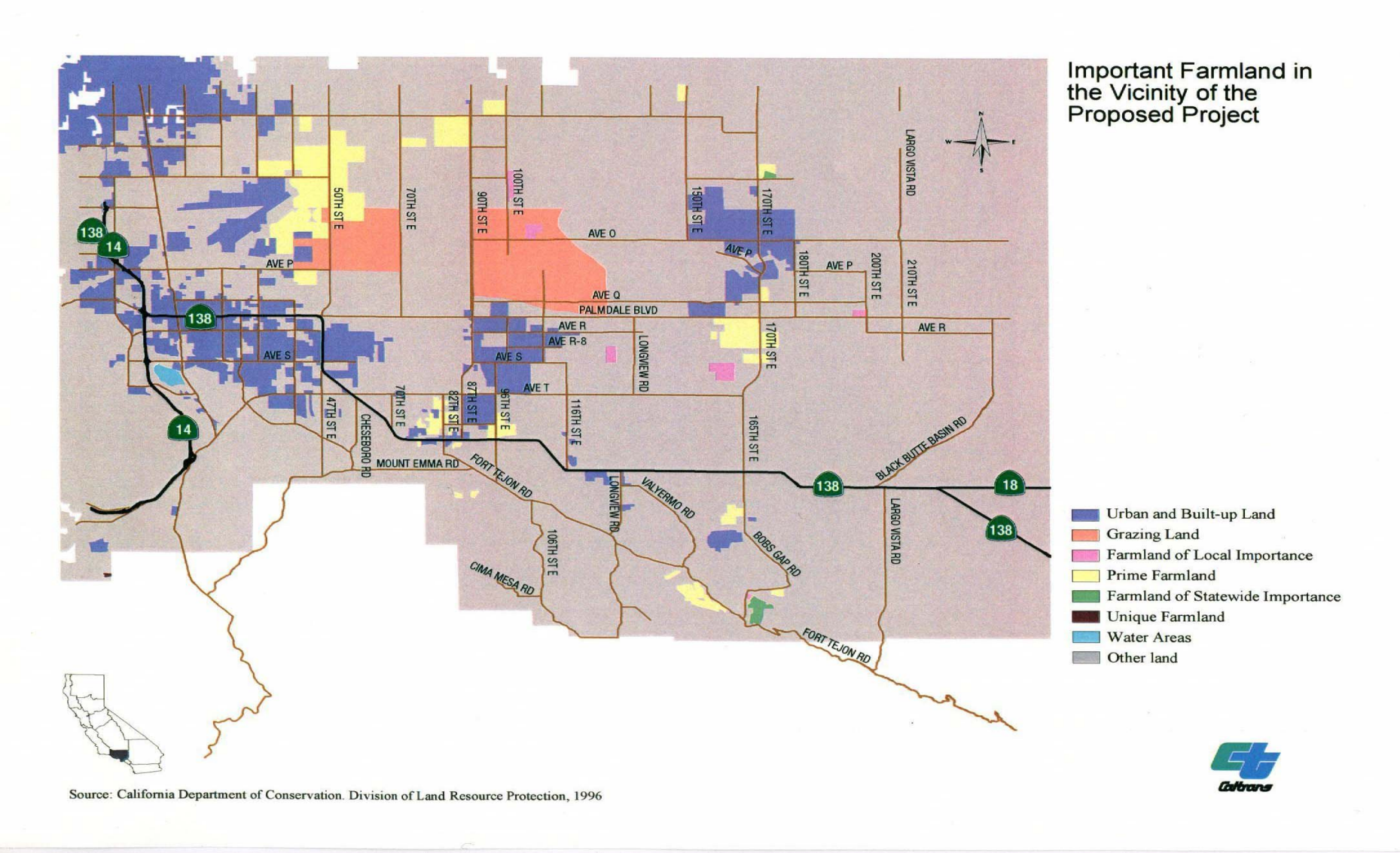


FIGURE 10 **IMPORTANT FARMLAND IN THE VICINITY OF THE PROPOSED PROJECT**

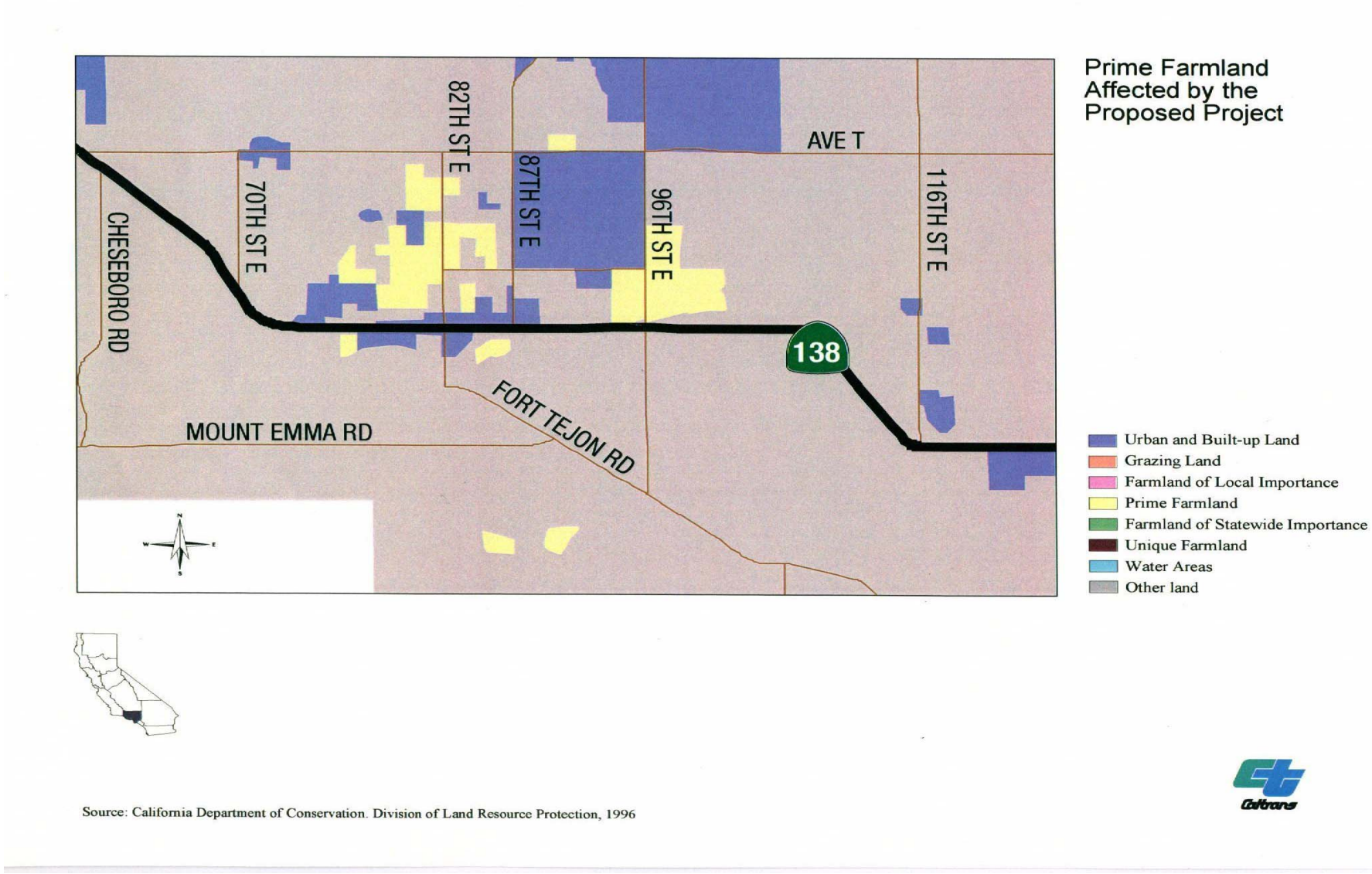


FIGURE 11 PRIME FARMLAND AFFECTED BY THE PROPOSED PROJECT

3.8.2 Population

Current trends in the Antelope Valley indicate that the population is increasing in large numbers and there will be an increase in the number of houses built. The construction of homes in the Antelope Valley is a large part of the economy. Between 1997-1998 a total of 394 homes were built in Palmdale.

Table 18 displays the regional demographics for all the communities in the proposed project site.

Table 18 Regional Demographics

	Palmdale	Littlerock	Pearblossom	Llano	Los Angeles County
Population	68,842	1,320	1,106	1,204	8,863,164
Median Age	27.6	28.3	-	-	30.7
Married Couples	65.4%	66.8%	35.4%	35.6%	48.7%
65 & over	4.8%	6.0%	16.2%	21.8%	9.7%

Source US Census Bureau 1990

Table 19 compares population trends by city and areas including Los Angeles and Kern County. From 1990 to 1997 the City of Palmdale and the Antelope Valley Area have grown considerably. The population of City of Palmdale has grown nearly 60% in the last seven years with an average annual increase of more than 8%. The total Antelope Valley growth is nearly 33% and the average annual increase for the last seven years is more than 4%.

Table 19 Antelope Valley Region Population Trends by City and Area

				Avg. Annual % Increase	**Avg. Annual % Increase**
Antelope Valley Locations	4/1/90	1/1/93	1/197	1990/93	1993/97
South Eastern Kern	32,876	36,363	41,451	2.68	4.05
Unincorporated LA	74,434	76,765	85,132	1.13	2.62
City of Lancaster	97,291	107,700	123,200	3.43	3.42
City of Palmdale	68,842	89,700	114,900	10.07	6.39
Total Antelope Valley	273,443	309,528	364,683	4.60	4.18
Los Angeles Co.	8,863,164	9,158,400	9,488,200	1.20	0.78
Kern County	543,477	603,300	628,200	3.85	1.03
Antelope Valley as a % of Combined Kern and LA Counties	2.91	3.17	3.6		

Source: Greater Antelope Valley Economic Alliance 1999

Table 20 compares the Education Demographics of the communities in the project area with that of Los Angeles County.

Table 20 Education Demographics

Education	Palmdale	Littlerock	Pearblossom	Llano	Los Angeles County
% High School{ XE "School" } Grad	28.3	18.2	32.6	27.1	70.0
% College Grad	13.3	8.40	5.10	12.6	22.3

Source: US Census Bureau 1990

Table 21shows the total ethnic population for 1990 in the Antelope Valley Communities that are located on State Route 138 in the proposed project area compared to Los Angeles County.

Table 21 Ethnic Population in Antelope Valley Communities

Ethnic Population	Palmdale	Littlerock	Pearblossom	Llano	Los Angeles County
White	36,947	639	871	847	1,738,602
Hispanic	15,154	402	173	276	3,306,116
Asian / Pacific Islander	3,030	19	-	26	955,329
African-American	4,398	53	-	184	990,406
American Indian	648	10	26	30	43,689
Other	8,665	197	71	59	1,829,022
Total	68,842	1,320	1,141	1,422	8,863,164

Source: US Census Bureau 1990

3.9 Public Services & Facilities

The public utilities include electrical power, natural gas, telephone service, cable television services and communication services. Electricity is served to the county through Southern California Edison Company. The Southern California Gas Company provides gas service to Palmdale and the surrounding communities. Telephone services are provided by Pacific Bell and General Telephone Company of California (GTE). The Palmdale Water District and the Littlerock Creek Irrigation District provides the water service in the area. There are three post offices directly located within the project vicinity on State Route 138:

- 7727 Pearblossom Highway (Northern side of State Route138)
- 12302 Pearblossom Highway (Southern side of State Route 138)
- 17234 Pearblossom Highway (Southern side of State Route 138)

Hospital service is provided by Palmdale Hospital Medical Center, which provides 24-hour emergency service. Sewer service to the City of Palmdale is provided by the Los Angeles County Sanitation District Number 20. Water treatment is provided by Palmdale Water District treatment plant. Six disposal companies that use the Antelope Valley Landfill for solid waste disposal serve the City of Palmdale. Police protection is provided by the Los Angeles County Sheriff's Department with additional services provided by the California Highway Patrol (CHP). The CHP provides traffic enforcement for the unincorporated area and will provide emergency assistance with respect to

general law enforcement when necessary, as does the Los Angeles County Sheriff's department. The Los Angeles County Fire Department provides fire protection for the project area. The proposed project area is serviced by two fire stations.

- Station number 92 located in Littlerock at 8905 East Avenue U
- Station number 79 located in Pearblossom at 33957 Longview road

3.9.1 Schools

Alpine Elementary is within the project vicinity and is part of the Keppel Union Elementary School District. Keppel Union Elementary School District is an independent school district not in the Los Angeles School District. Alpine Elementary provides education for children in grades K through 6. Table 22 describes the ethnic composition of the school.

Table 22 Ethnic Population of Alpine Elementary School 1998-1999 School Year

Race/Ethnicity	# of Students	% of School Population
White	299	52.8
African-American	19	3.4
Hispanic/Latino	234	41.3
American Indian or Alaskan Native	7	1.2
Asian	1	0.2
Filipino	3	0.5
Pacific Islander	3	0.5
Total	566	100.0

Source: California Department of Education 1998-1999 School Year/Educational Demographics Unit

3.10 Transportation

State Route 138 is a regional arterial highway that connects to State Route 14 and State Route 18. State Route 138 extends from the San Bernardino County line to Sierra Highway, where it branches into State Route 18 and Antelope Highway State Route 138 within the project limits between PM 51.4 (KP 82.7) and PM 69.4 (KP 111.69). State Route 138 consists of two 12 ft (3.65 m) lanes, one in each direction, with a broken centerline in some areas to allow for passing. State Route 138 has a high percentage of truck traffic, 14% in the vicinity of Avenue T and 7% near the junction of Route 138/18.

Bus service within the project area is provided through the Antelope Valley Transit Authority and serves the City of Palmdale and the communities of Littlerock and Pearblossom.

The Southern Pacific Railroad operates two rail lines that cut through the City of Palmdale and through the outlying communities. The rail traffic through the city and communities is used only for freight.

There is a proposed Metrolink station in the City of Palmdale, which would connect Palmdale with the rest of the Antelope Valley Metrolink Line that runs to Los Angeles.

3.11 Historic & Cultural Resources

The area around the project site was once home to such cultural groups as the Kitanemuk, Kawaissu, Tatavium and the Serrano/Vanyume.

Between the intersection of the Pearblossom Highway, California Aqueduct and the Little Rock Wash there are paleontology records that show there are fossil sites that have vertebrate paleontology. The sites have produced fossil horse teeth, mammoth tooth fragments, and rabbit, bird, carnivore and rodent tooth and bone fragments

Situated on State Route 138 sixty miles north of Los Angeles is the town of Llano where the Llano del Rio Cooperative colony was founded on approximately 2100 acres bisected by State Route 138. The colony was founded in 1914 by Job Harriman to promote a Socialist Utopian Society and as a "haven from capitalism and competition". The colony started to take shape in May of 1914 when the first group of settlers arrived at the site. The first buildings were constructed of canvas and wood with a few buildings made from rock, adobe and mortar. As time progressed they started to build more complicated structures such as a two-story hotel, post office, boot factory and a cannery. The population of the colony increased gradually to almost a 1,000 people but experienced a decrease in population starting in 1917 due to internal conflicts within the colony and the lack of assistance from Job Harriman. In 1918 the colony went into receivership and there was a mass exodus to a new site in Louisiana. The State of California recognizes the site of Llano del Rio Cooperative colony as a historical landmark number 933. Also the colony is eligible for the National Register of Historic Places. This site is one of the most important non-religious Utopian experiments in western American history. See Figure 6.

3.12 Noise Analysis

The project area on State Route 138 must meet the noise criteria set forth by the Federal Highway Administration (FHWA) which is that noise levels must not exceed 67 decibels (dBA), the maximum allowable exterior noise level or 52 decibels (dBA), the maximum allowable interior noise levels for residential areas.

The Traffic Noise Analysis Protocol contains Caltrans noise policies, which fulfill the highway noise analysis and abatement/mitigation requirements stemming from the following State and Federal environmental statutes:

- California Environmental Quality Act (CEQA)
- National Environmental Policy Act (NEPA)
- Title 23 United States Code of Federal Regulations, Part 772 "Procedures for Abatement of Highway Traffic Noise and Construction Noise" (23 CFR 772)
- Section 216 et seq. of the California Streets and Highways Code.

Policies, procedures and practices are provided in the Traffic Noise Analysis Protocol for use by agencies that sponsor new construction or reconstruction of transportation projects. The Traffic Noise Analysis Protocol is designed to evaluate the potential traffic and construction generated noise impacts, and determines reasonable and feasible noise abatement/mitigation for the project.

A traffic noise impact will also occur when predicted noise levels within the project area approach within 1 dBA, or exceed the Noise Abatement Criteria as seen in Table 23. See Appendix B Noise Receptor Location Aerial Maps.

Table 23 Noise Criteria

Activity Category	NAC, Hourly A-Weighted Noise Level, dBA L_{eq} (h)	Description of Activities
A	57 Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 Exterior	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 Exterior	Developed lands, properties, or activities not included in Categories A or B above. Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
D	--	Undeveloped lands
E	52 Interior	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Caltrans Traffic Noise Analysis Protocol 1998

The current noise levels at the Project Site are shown in Table 24.

Table 24 Existing Noise Levels in Project Area

LOCATION	DATE	START TIME	Leq avg. (dBA)	FUTURE NOISE LEVELS	** (NAC) dBA	**NOISE IMPACT
LOCATION 1 Pearblossom at Little Rock Wash (PM 53.55) on the Westbound Side of the roadway, 30' from the edge of traveled way.	11/14/97	11:47:59	72.2	74.4	(B) 67	YES
LOCATION 2 Front Yard of 8026 Pearblossom Hwy, Pearblossom at 80th Street, on the Eastbound side of the traveled way	11/14/97	13:03:40	66.8	68.9	(B) 67	YES
LOCATION 3* Alpine School- located at Hwy 138 and 82nd Street.						
Room 1 - inside- door closed	12/30/97	15:15:45	42.5	44.7	(B) 67, (E) 52	NO
Room 1 - outside- door closed	12/30/97		66.1	68.3	(B) 67, (E) 52	NO
Room 6 - inside- door closed	12/30/97	15:49:24	41.5	43.1	(B) 67, (E) 52	NO
Room 6 - outside- door closed	12/30/98		65.2	67.2	(B)67, (E) 52	NO

*Note: The classroom windows are sealed and the rooms are air-conditioned.

The City of Palmdale also has noise generated by military aircraft traffic. Noise from military aircraft operations were recorded by the City of Palmdale at a maximum aircraft departure of 92 to 95 decibels. Approaching aircraft noise levels were recorded at 85 to 92 decibels.

3.13 Parks and Bicycle Facilities

3.13.1 Park

At one time there was a 46-acre proposed park located within the Community of Llano and within the boundaries of the 2100-acre Llano del Rio Colony site. The land is to the northwest corner of the State Route 138/175th street intersection, which is adjacent to State Route 138 in the project area. The County of Los Angeles Department of Parks and Recreation owns the land and it is zoned for light agricultural and commercial use and is no longer considered a feasible park site.

3.13.2 Equestrian Trails

Currently equestrian trails have not been formally designed for the project area, but extensive plans exist for many proposed trails. The Los Angeles County Department of Parks and Recreations has developed a Master Plan that identifies 5 equestrian trail crossings as of 1999. The locations of these crossings are along State Route 138 in the proposed project area and are located at:

- Littlerock Wash Bridge – trail crosses under east side of the bridge
- 96th St. East - at-grade crossing on the west side
- 121st St. East - at-grade crossing on the west side
- Big Rock Wash Bridge - trail crosses under west side of the bridge
- Largo Vista - at-grade crossing on the east side

Also the Antelope Valley Trails, Recreation and Environmental Council (AVTREC), which is an advisory group to the County Master plan has requested two additional at-grade crossings located at:

- 89th St. East
- 165th St. East

Figure 12 shows current and proposed equestrian trails in the project area.

3.13.3 Bicycle Lanes

In the proposed project area between Avenue T and State Route 138 there are no bicycle lanes. In the City of Palmdale General Plan and the Los Angeles County General Plan there are proposed plans that include a bicycle lane which would be in the project area. There are no plans to develop this bicycle lane. Implementation of the bicycle lane would be phased with other development in the specific area.

3.14 Scenic Resources

The scenic resources of the Antelope Valley include open space, landscaped corridors and viewsheds. The Godde Hills Road winds up the Portal Ridge Mountains and overlooks the entire Antelope Valley. The City of Palmdale has designated portions of the Pearblossom Highway as a Scenic Highway. The California Department of Transportation has not recognized State Route 138 as a Scenic Highway.

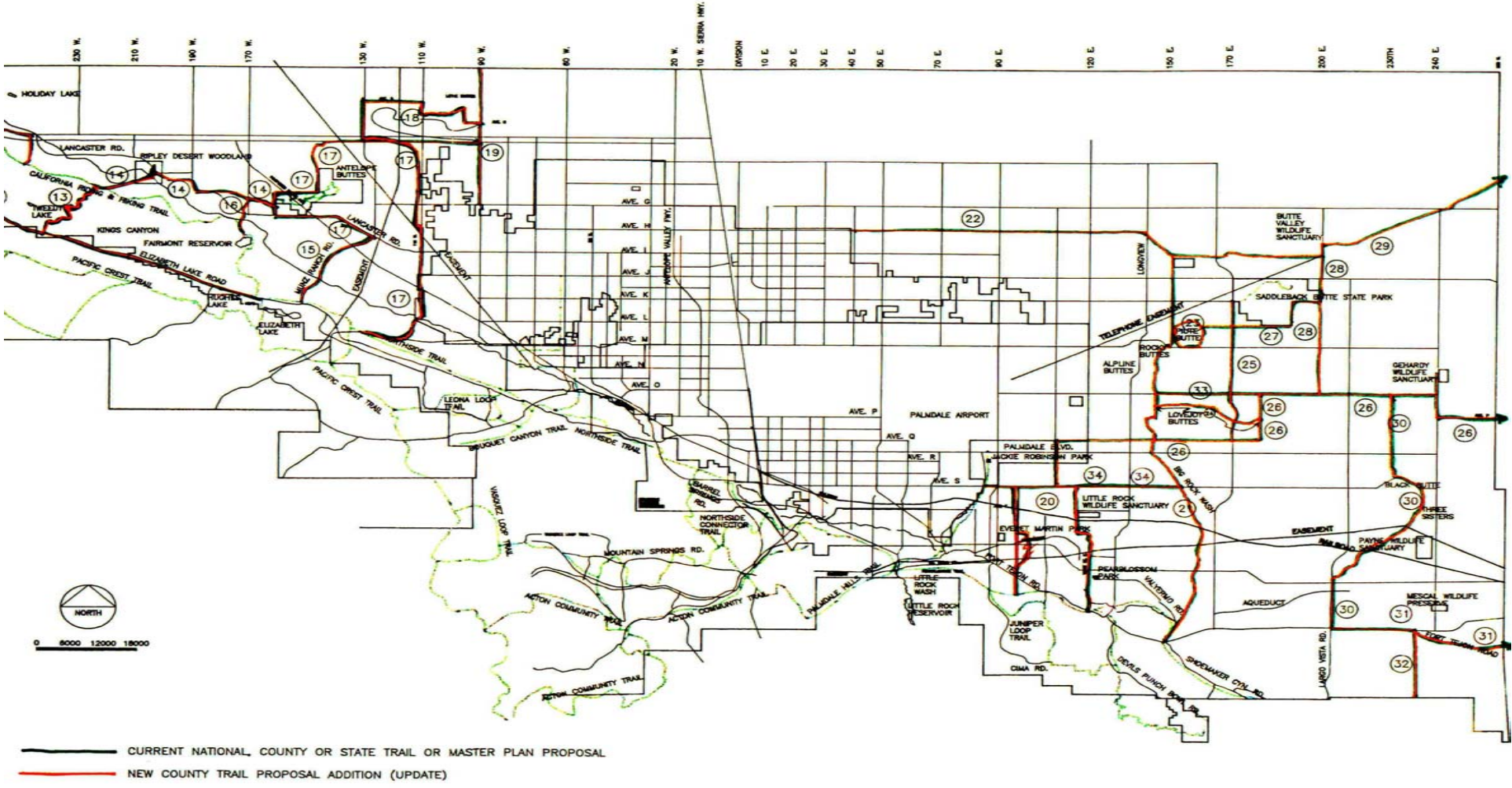


FIGURE 12 LOCATION OF EQUESTRIAN TRAILS IN PROJECT AREA

4.0 Environmental Evaluation

Projects located in California that are undertaken by federal agencies, utilize federal funds, or require discretionary approval from federal agencies, are subject to both the National Environmental Policy Act (NEPA) (42 USC 4321, et seq.) and the California Environmental Quality Act (CEQA) (PRC 2100-21178.1, et seq.). The basic procedural and policy structure of NEPA and CEQA are similar, and the content requirements for documents implementing NEPA and CEQA are also similar. CEQA does require a "finding of significant effects" in certain cases, which are not required by NEPA or the Federal Highway Administration (FHWA) guidance for applying NEPA (FHWA Technical Advisory T6640.8A).

Determining significance on project environmental impacts requires careful evaluation based on technical data. To assist in making this determination, an environmental checklist was completed. See Section 4.1.

Technical studies were conducted to provide background data and to assist in evaluating the environmental consequences of the proposed project. The following studies are incorporated by reference into the document.

- Air Quality Conformity (March 2000)
- Physical Environment Report-Noise, Air Quality and Energy (February 1998)
- Historical Property Survey Report (February 2000)
- Geotechnical Report (July 1999)
- Hydraulic/Floodplain Analysis (Location Hydraulic Study August 1998)
- Visual Impact Analysis (April 2000)
- Traffic Forecast Analysis (May 2000)
- Natural Sciences Study Report (January 2000)
- Project Scope Summary Report, Big Rock Wash Bridge (August 1997)
- City of Palmdale Specific Plan (1993)
- Draft Relocation Impact Report (January 2000)
- Antelope Valley General Plan (December 1986)
- Initial Site Assessment (Professional Service Industries January 1998)
- Utility Impact Study (November 1999)
- Project Study Report (October 1991)
- Traffic Study (June 2000)
- Site Investigation Report-Lead Testing (January 1996)
- Archaeological and Historical Investigation Report (February 2000)

The technical reports are available for review at the following location.

Caltrans, District 7
Office of Environmental Planning
120 South Spring Street
Los Angeles, CA 90012

4.1 CEQA Environmental Checklist

This checklist was used to identify physical, biological, social and economic factors, which might be impacted by the proposed project. In many cases, the background studies performed in connection with this project clearly indicate the project will not affect a particular item. A "NO" answer in the first column documents this determination. Where there is a need for clarifying discussion, an asterisk is shown next to the answer. The discussion is in the section following the checklist.

PHYSICAL. Will the proposal (either directly or indirectly):		YES or NO	If YES, is it significant? YES or NO
1.	Appreciably change the topography or ground surface relief features?	YES	NO*
2.	Destroy, cover, or modify any unique geologic or physical features?	YES	NO*
3.	Result in the loss of availability of a known mineral resource or locally important mineral resource recovery site, that would be of value to the region and the residents of the state?	NO	
4.	Result in unstable earth surfaces or increase the exposure of people or property to geologic or seismic hazards?	NO*	
5.	Result in or be affected by soil{ XE "Soil" } erosion{ XE "Erosion" } or siltation (whether by water or wind)?	YES	NO*
6.	Result in the increased use of fuel or energy in large amounts or in a wasteful manner?	NO	
7.	Result in an increase in the rate of use of any natural resource?	NO	
8.	Result in the substantial depletion of any nonrenewable resource?	NO	
9.	Violate any published Federal, State, or local standards pertaining to hazardous waste{ XE "Hazardous Waste" }, solid waste or litter control?	NO*	
10.	Modify the channel of a river or stream or the bed of the ocean or any bay, inlet or lake?	YES	NO*
11.	Encroach upon a floodplain or result in or be affected by floodwaters or tidal waves?	YES	NO*
12.	Adversely affect the quantity or quality of surface water, groundwater, or public water supply?	YES	NO*
13.	Result in the use of water in large amounts or in a wasteful manner?	NO	
14.	Affect wetlands or riparian vegetation{ XE "Vegetation" }?	YES	NO*
15.	Violate or be inconsistent with Federal, State or local water quality{ XE "Water Quality" } standards?	NO*	
16.	Result in changes in air movement, moisture, or temperature, or any climatic conditions?	NO	
17.	Result in an increase in air pollutant emissions, adverse effects on or deterioration of ambient air quality?	NO	
18.	Results in the creation of objectionable odors?	NO	
19.	Violate or be inconsistent with Federal, State, or local air standards or control plans?	NO*	
20.	Result in an increase in noise levels or vibration for adjoining areas?	YES	NO*
21.	Result in any Federal, State, or local noise criteria being equal or exceeded?	YES	NO*

22. Produce new light, glare, or shadows?	NO	

BIOLOGICAL. Will the proposal (either directly or indirectly):	YES or NO	If YES, is it significant? YES or NO
23. Change in the diversity of species or number of any species of (including trees, shrubs, grass, microflora, and aquatic plants)?	YES	NO*
24. Reduction of the numbers of or encroachment upon the critical habitat or any unique, threatened or endangered species{ XE "Endangered Species" } of plants?	YES	NO*
25. Introduction of new species of plants into an area, or result in a barrier to the normal replenishment of existing species?	NO	
26. Reduction in acreage of any agricultural crop or commercial{ XE "Commercial" } timber stands, or affects prime, unique, or other farmland of State or local importance?	YES	NO*
27. Removal or deterioration of existing fish or wildlife habitat?	YES	NO*
28. Change in the diversity of species or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects or microfauna)?	NO	
29. Reduction of the numbers of or encroachment upon the critical habitat of any unique threatened or endangered species{ XE "Endangered Species" } of animals?	YES	NO*
30. Conflict with any applicable habitat conservation plan, natural community conservation plan or other approved local, regional or state habitat plan?	YES	NO
31. Introduction of new species of animals into an area, or result in a barrier to the migration of movement of animals?	YES	NO*
SOCIAL AND ECONOMIC. Will the proposal (directly or indirectly):		
32. Cause disruption of orderly planned development?	NO	
33. Be inconsistent with any elements of adopted community plans, policies or goals?	NO	
34. Be inconsistent with a Coastal Zone Management Plan?	NO	
35. Affect the location, distribution, density, or growth rate of the human population{ XE "Population" } of an area?	NO*	
36. Affect life-styles, or neighborhood character or stability?	YES	NO*
37. Affect minority, elderly, handicapped, transit-dependent, or other specific interest groups?	YES	NO*
38. Divide or disrupt an established community?	NO	
39. Affect existing housing{ XE "Housing" }, require the acquisition of residential improvements or the displacement of people or create a demand for additional housing{ XE "Housing" }?	YES	NO*
40. Affect employment, industry or commerce, or require the displacement of businesses{ XE "Businesses" } or farms?	YES	NO*
41. Affect property values or the local tax base?	YES	NO*
42. Affect any community facilities (including medical, educational, scientific, recreational, or religious institutions, ceremonial sites or sacred shrines)?	YES	NO*
43. Affect public utilities, or police, fire, emergency or other public services?	YES*	NO*
44. Have substantial impact on existing transportation systems or alter present patterns of circulation{ XE "Circulation" } or movement of people and/or goods?	YES	NO*
45. Generate additional traffic{ XE "Traffic" }?	YES	NO*

46.	Affect or be affected by existing parking facilities or result in demand of new parking?	YES	NO*
47.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	NO	
SOCIAL AND ECONOMIC continued. Will the proposal (either directly or indirectly):		YES or NO	If YES, is it significant? YES or NO
48.	Involve a substantial risk of an explosion or the release of hazardous substances in the event of an accident{ XE "accident" } or otherwise adversely affect overall public safety?	NO	
49.	Result in alterations to waterborne, rail or air traffic{ XE "Traffic" }?	NO	
50.	Support large commercial{ XE "Commercial" } or residential development?	YES	NO
51.	Affect a significant archaeological or historic site, structure object, or building?	YES	YES*
52.	Affect wild or scenic rivers or natural landmarks?	NO	
53.	Affect any scenic resources or result in the obstruction of any scenic vista or view open to the public, or creation of an aesthetically offensive site open to public view?	NO	
54.	Result in substantial impacts associated with construction activities (e.g., noise, dust{ XE "Dust" }, temporary drainage, traffic{ XE "Traffic" } detours{ XE "Detours" } and temporary access, etc.)?	YES*	NO*
55.	Result in the use of any publicly owned land from a park, recreation area, or wildlife and waterfowl refuge?	NO	
MANDATORY FINDINGS OF SIGNIFICANCE			
56.	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause fish or wildlife population{ XE "Population" } to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number of, restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	YES	NO*
57.	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one, which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)	NO	
58.	Does the project have environmental effects, which are individually limited, but cumulatively considerable? Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects probable future projects. It includes the effects of other projects, which interact with this project and, together, are considerable.	YES	YES*
59.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	NO	

* An asterisk indicates that impacts can be mitigated to a level of non-significance.

4.2 Discussion of Environmental Consequences

This section is devoted to explanations of impacts and proposed mitigation measures{ XE "Mitigation Measures" }. Any mitigation measures{ XE "Mitigation Measures" } that are proposed are clearly identified.

4.3 Geology{ XE "Geology" }, Topography{ XE "Topography" }, Seismic (Environmental Checklist Questions 1,2,4)

In the proposed alternatives there will be some changes in the profile of the existing highway. The preferred alternative{ XE "Alternative" } will require the profile of the highway to be elevated 5 ft (1.5 m) to accommodate the drainage culverts required to eliminate the retention of water on the roadway. In the Big Rock Wash the topography will change due to an increase in the profile of the bridge in order to accommodate a wildlife corridor and to elevate the roadway from possible flooding during the storm event.

The Llano del Rio site would have a change in profile as much as 6 ft (1.8 m) in order to accommodate new culverts in order to diverge water away from the site.

The existing highway and the project site are situated in an active seismic region that is located less than 3 miles northerly of the San Andreas Fault Zone.

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

1. *The effects of seismicity on geotechnical studies will be assessed and addressed in the Final Geotechnical Design Report (GDR) after the project has been finalized and all required geotechnical structures have been identified. The Final GDR will include detailed descriptions of all sections presented in the preliminary report, as well as a field investigation and laboratory testing, a soil corrosion investigation, construction considerations, recommendations for earthwork, embankment slopes and subgrade drains.*
2. *Work would be conducted during the dry season, unless an emergency situation arises during the wet season.*
3. *All bridges and other structures would be in conformance with the California Highway Design Manual and most recent earthquake research findings in order to ensure that the safest design would be implemented.*

4.3.1 Soil Erosion (5)

Construction of new bridges in the Little Rock and Big Rock Wash may result in soil{ XE "Soil" } erosion{ XE "Erosion" }. The potential for high winds along the corridor contributes to erosion{ XE "Erosion" }. The AQMD Rule 403 governs soil{ XE "Soil" } erosion{ XE "Erosion" }

due to wind across bare or excavated soil{ XE "Soil" } during the construction phase of the project.

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

1. *An effective dust{ XE "Dust" } control plan shall be incorporated as required by the AQMD.*
2. *Erosion control procedures, such as application of stabilizing materials to exposed soil{ XE "Soil" }, shall be used as appropriate during construction. Water may be used as a stabilizer: however hydroseeding or planting of vegetation{ XE "Vegetation" }, polymers or other chemical stabilizers, or straw matting may be used alternatively.*

4.4 Hazardous Waste (9)

An Initial Site Assessment was conducted for the State Route 138 widening project. Asbestos and a lead-based paint surveys were not performed in the Initial Site Assessment. However lead-based paint and asbestos containing materials and components may be present in existing buildings due to the age, which may be impacted by the proposed right-of-way acquisition. Therefore, sampling for lead-based paint and asbestos is recommended. Prior to right-of-way acquisition and/or any demolition activities, a comprehensive asbestos survey in accordance with the South Coast Air Quality{ XE "Air Quality" } Management District (SCAQMD) Rule 1403 will be conducted. There are above and underground storage tanks just outside the proposed right-of-way.

Between 126 St. East (PM 59.8, KP 96.23) and State Route 18 (PM 69.5, KP 111.84) a Site Investigation Report identified two areas where concentrations of lead located 0.5 (0.15 m) to 1.5 feet (0.46 m) below the surface level are at a hazardous level. It is estimated that approximately 222 cubic yards of soil{ XE "Soil" } at the site is impacted with hazardous concentrations of lead and will require special handling. Other areas along the State Route 138 widening project are below the Caltrans acceptable variance for lead and below the threshold limit for the amount of lead present in the soil{ XE "Soil" }. Therefore the sites are no longer considered to have a potential for hazardous waste{ XE "Hazardous Waste" }.

Caltrans applies an Aerial Lead variance that has been approved by the Department of Toxic Substances Control to project sites when there is a potential for contaminated soil{ XE "Soil" }. The variance allows Caltrans to reuse soil{ XE "Soil" }-containing lead, as long as it is handled properly, replaced along the same section of highway (within the freeway corridor) and covered with clean soil{ XE "Soil" } or roadway. The goals of the variance are to 1) make sure that the lead will stay where it placed and 2) that neither animals nor humans can come into contact with it.

The following properties would require further investigations to ensure there is no contamination into the right-of-way.

- Concrete and metal piping remains located on the southwest corner of Four Points
- Valco Transmission 78226 Pearblossom Highway- UST
- C-Bar-B plaza (Littlerock Liquor and Gas), 8063 Pearblossom Highway-UST
- Black Gold Oils Company Station #147, 8157 Pearblossom Highway- LUST/Cortese List, UST

- Pacific Bell, 9550 Pearblossom Highway-RCRA large generator-LUST,AST
- Jerry's Minute Mart, 12515 Pearblossom Highway-LUST/Cortese,UST
- Kwik Tune Lube and Oil , 13100 Pearblossom Highway- UST
- Buchanan Union 76 (Jack's Gas and Mini Mart), 17326 Pearblossom Highway-UST
- Unidentified residential property at Largo Vista Road- Drums, AST

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

1. *A Preliminary Site Investigation (PSI) would be conducted prior to acquisition.*
2. *A thorough on site visual inspection of property with identification of drums, containers, vents, soil{* XE "Soil" *} staining or any other possible point source contaminants.*
3. *Communication with property owners and personnel.*
4. *In the sites of lead contamination it is recommended to excavate intervals of 0.5 to 1.5 feet (0.15 to 0.46 m) of soil{* XE "Soil" *} using the following process: The interval from 0 to 0.5 feet (0 to 0.46 m) below ground surface (bgs) should be excavated and stockpiled as Stockpile A. The interval of lead impacted soil{* XE "Soil" *}, 0.5 to 1.5 feet (0.15 to 0.46 m) bgs, should be excavated and stockpiled as Stockpile B. Soil existing at depths from 1.5 to 3.0 feet (0.46 to 0.91 m) bgs should be excavated and stockpiled with Stockpile A. Stockpile B should then be re-used and placed from 2.0 to 3.0 feet (0.6 to 0.91 m) bgs. Stockpile A should then be placed over the lead impacted cover.*
5. *Notify contractors that there is a detectable concentration of lead present within the on-site soils.{* XE "Soils" *}*
6. *Necessary health and safety precautions should be taken to avoid/minimize potential exposure to lead in the on-site soil.*
7. *All properties to be acquired should be clear of Hazardous Waste/Materials prior to acquisition by Caltrans.*
8. *Caltrans and its contractors would use Best Management practices in dealing with Hazardous waste.{ XE "Soil" }*

4.5 Floodplain{ XE "Floodplain" } (11)

The project area encroaches on floodplains{ XE "Floodplains" } transversely at various locations throughout its length. The roadway encroaches on all existing conditions and would be continued in all design alternatives of the project. In order to alleviate this problem it is proposed to raise and level the roadway to the top of the existing high points, and place culverts to allow water to pass under the 4-lane highway.

Three areas of concern that were identified by the Location Hydraulic Study are as follows.

- Little Rock Creek Bridge #53-303 PM 53.57
- Big Rock Wash Bridge #53-313 PM 63.00
- Big Rock Wash Bridge #56-314 PM 63.04

Little Rock Creek Bridge #53-303 is in a floodplain and is exposed to flooding. This bridge is in an alluvial fan formation and the extent of flooding will vary, because of the continual degradation, aggradation and meandering of the water in the channel and the strength of each

individual storm. The risk associated with the implementation of any of the project alternatives is low.

Big Rock Wash Bridges # 53-313 and #53-314 are located in a floodplain and are both subjected to flooding. This location is in an alluvial fan formation and the extent and depth of flooding is dependent on the severity of the storm. The risk associated with the implementation of the proposed project is low.

As discussed in the Location Hydraulic Study (Appendix L) the proposed project would not constitute a significant floodplain encroachment, as required by 23 CFR 650, Subpart A (Executive Order 11988 and 23 CFR 650 Subpart A). The proposed project would not support incompatible floodplain development. It was also determined that the project would not adversely affect the base floodplain and would not impact the natural and beneficial floodplain values. The City of Palmdale and the Communities of Littlerock, Pearblossom, and Llano are all active participants in the National Flood Insurance Program.

4.5.1 Water Quality (10, 12,14,15)

Although present water quality is satisfactory, there is a slow trend toward reduced groundwater quality, due to increased urban run-off, septic tank failures in the San Gabriel watershed, declining water tables, and an extensive perched water condition in the Lancaster sub-unit of the Antelope Valley Basin (this sub-unit presently supplies the majority of the pumped water supply in the Basin). The proposed project widening of Big Rock Wash Bridge would occur in Big Rock Wash and since the creek is seasonal there will not be any effects to the existing water quality{ XE "Water Quality" }. Also all work that will be required would be done during low flow season.

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

1. *Earthen or paved interceptors and diversions will be installed at the top of cut or fill slopes where there is a potential for surface runoff on constructed slopes.*
2. *Excavated materials would not be deposited or stored alongside watercourses where material can be washed away by high water or storm runoff.*
3. *Drainage would be designed to perpetuate existing flows to the maximum extent feasible.*
4. *Water quality control measures would be undertaken during project construction in compliance with Caltrans Standard Specifications Section 7-1.01G – Water Pollution Control Program (WPCP) and/or Storm Water Pollution Prevention Plan (SWPPP) requirements.*
5. *Caltrans would obtain water quality{* XE "Water Quality" *} certification, under Section 401 of the Clean Water Act, from the California Regional Water Quality Control Board.*
6. *Caltrans would obtain 404 permit{* XE "Permit" *} from the Army Corps of Engineers.*
7. *The drainage area would be evaluated for the need to acquire a Section 1601 Streambed Alteration Agreement from the California Department of Fish and Game.*

8. *Caltrans will continue to coordinate with CDFG prior to submitting the Streambed Alteration Agreement application. Caltrans and its' contractors will comply with all conditions of the Streambed Alteration Agreement. Caltrans will be responsible for avoiding, minimizing, and mitigating impacts to the streambank areas. The agreement will include mitigation plans, the commitment to annual monitoring of the mitigation sites, and reporting to the resource agencies for five years.*

4.6 Air Quality{ XE "Air Quality" } (19)

The Quantitative measurement of the Air Quality{ XE "Air Quality" } was done with both microscale and mesoscale analysis. The major sources of air pollutants on State Route 138 are produced by motor vehicles. The emissions that were analyzed were found to contain carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NO_X), oxides of sulfur (SO_X) and particulates that are all primary pollutant emissions form vehicular traffic{ XE "Traffic" }.

The Clean Air Act Amendments (CAAA's) of 1990 require that transportation plans, programs and projects which are funded by or approved under Title 23 U.S.C. or Federal Transit Act (FTA) conform with state or federal air quality plans. In order to be found to conform, a project must come from approved transportation plans and programs such as the State Implementation Plan (SIP), the Regional Transportation{ XE "Transportation" } Plan (RTP) and the Regional Transportation Improvement program (RTIP). This project is identified in the federally approved (July 31,1998) RTIP.

This project is identified in the Department of Transportation{ XE "Transportation" } (District 7) 1991 Route/Transportation Concept Report (RCR/TCR). The project is also listed in the June, 1999 Los Angeles County Metropolitan Transportation Authority (LACMTA) Transportation Improvement Program (TIP) Call for Project Listing. The project is consistent with the 1998 Regional Transportation Plan (RTP), adopted on April 16,1998 and prepared by the Southern California Association of Governments (SCAG).

Regional Level

The project is located in an area that is classified attainment for Carbon Monoxide (CO); therefore it is not subject to localized CO impact review. The Quantitative Analysis for this project is provided for the purpose of relating project pollutant concentrations to State and Federal Ambient Air Quality{ XE "Air Quality" } standards shown in the Table 25. Worst case concentrations of roadside CO were computed using the screening procedure outlined in the Caltrans Air Quality Technical Analysis Notes for the build and no build alternatives.

Concentrations of CO are chosen as the indicator of impact because of the relative inertness of the gas (on tome scales appropriate to urban regions). This characteristic makes it possible to reliably predict dispersion and transport to receptors adjacent to the highway. The rest of the primary emissions are considered too unstable for reliable prediction.

Table 25 shows a slight reduction at the micro-scale level will take place due to the easement of traffic{ XE "Traffic" } congestion and idle time with the build alternative{ XE "Alternative" }.

Table 25 CO Concentration Results compared to Build and No Build Alternative{ XE "No Build Alternative" }

Time	Receptor	Ambient	No Build		Build	
			Roadway Contribution	Total	Roadway Contribution	Total
1 Hour	Worst case location	1.8 ppm	4.0 ppm	5.8 ppm	3.4 ppm	5.2 ppm
8 Hour	Worst case location	1.3 ppm	2.8 ppm	4.1 ppm	2.4 ppm	3.7 ppm

Source: Caltrans Physical Environment Report 1998

This project is located in Federal Particulate Matter (PM_{10}) unclassified/attainment area. PM_{10} hot spot analysis is not required for conformity purposes. Projects in federal attainment areas may need to perform hot spot analysis for CEQA or NEPA purposes independent of conformity analysis requirements. Based on the studies performed by Caltrans and UC Davis this type of project is unlikely to cause or experience a localized PM_{10} problem. The PM_{10} Air Quality{ XE "Air Quality" } Summaries for years 1997-1999 published by the Air Resources Board for Lancaster-W Pondera Street Monitoring Station showed no PM_{10} monitored violations of the state annual geometric mean and two violations of state daily standard per year during this period. This monitoring station is closest to the project site. The monitoring station showed state attainment for the annual geometric mean therefore this project can be considered satisfactory. This project is identified in the federally approved (July 31,1998) 1998/99-04/05 RTIP.

This project would not cause or contribute to any new localized CO or PM_{10} violations or increase the frequency or severity of any existing CO or PM_{10} nonattainment and maintenance areas.

4.7 Noise{ XE "Noise" } (20, 21)

FHWA regulation for mitigation of highway traffic{ XE "Traffic" } noise in the planning and design of federally aided highways is contained in 23 CFR 772. The regulation require the following during the planing and design of a highway project: (1) identification of traffic{ XE "Traffic" } noise impacts{ XE "Noise Impacts" }; (2) examination of potential mitigation measures{ XE "Mitigation Measures" }; (3) the incorporation of reasonable and feasible noise mitigation measures{ XE "Mitigation Measures" } into the highway project; and (4) coordination{ XE "Coordination" } with local officials to provide helpful information on compatible land use planning and control. The regulations contain noise abatement criteria, which represent the upper limit of acceptable highway traffic{ XE "Traffic" } noise for different types of land uses and human activities. The regulations do not require that the abatement criteria be met in every instance. Rather, they require that every reasonable and feasible effort be made to provide noise mitigation when the criteria are approached or exceeded. Compliance with the noise regulations is a prerequisite for granting of federal funds for construction of a highway. The FHWA noise regulations require that abatement measure be considered when highway traffic{ XE "Traffic" } noise impacts{ XE "Noise Impacts" } are identified and that abatement measures be implemented when they are determined to be reasonable and feasible.

The majority of the project area is surrounded by open space. Existing noise levels along State Route 138, as measured at sensitive receptors within the project limits and taken at times that

would be representative of the higher traveled periods, qualify for the consideration of noise mitigation per Caltrans' Design Manual, chapter 1100 and FHWA noise abatement procedures in the Code of Federal Regulations (23 CFR part 772). Noise{ XE "Noise" } levels exceeded the 67 dBA recommended by the FHWA as the maximum for residential areas. However, since the businesses{ XE "Businesses" } and residences have driveways and walkways abutting the highway, soundwalls would provide only 2-3 dBA of attenuation due to sound flaking. In addition, sight distance and sidewalk access requirements per Highway Design Manual 1102.4, Noise Barrier location, cannot be satisfied with the placement of soundwalls in any reasonable location. The construction of the soundwalls must prove reasonable and feasible. Therefore, noise mitigation is not considered feasible and not recommended for this project.

Alpine School{ XE "School" }

An area of particular concern is the Alpine elementary school. The entrance and exit to the school is via the driveways that connect to State Route 138. A noise impact may also be found if, as a result of a proposed project, noise levels exceed 52 dBA within the interior of an existing public or private elementary, or secondary school. An existing nominal height (6 ft., 1.8 m) soundwall provides minimal noise attenuation (1-2 dBA) for the outside area adjacent to room 6. Increasing the height of the soundwall would provide an additional 1-2 dBA of attenuation. Interior classroom noise levels are currently below 43dBA. All classrooms are air-conditioned much of the year. The projected future interior classroom noise levels with the project is 47 dBA or less. The future interior noise level will be well below the dBA criteria. Therefore, soundwalls are not recommended as a method of noise attenuation for this project.

4.8 Wildlife{ XE "Wildlife" } (23,29,56)

The proposed widening of State Route 138 from Avenue T to State Route 18 would impact local wildlife. Wildlife observed included mammal (primarily rabbits and coyotes), various birds (both songbirds and raptors, various reptiles and insects. Wildlife signs observed included various size burrows; tracks and scats of reptiles, rodents, and mammals. The California Department of Fish and Games Natural Diversity Data Base (NDDB) has indicated certain species that have a potential for being present in the project vicinity. The NDDB has indicated that the project area is in the historic range and habitat for the Mohave ground squirrel.

Impacts to the biological resources in the vicinity of State Route 138 widening would occur along the entire route, with particular concentration around the Little Rock Wash and Big Rock Wash. The largest waterways include Little Rock and Big Rock Washes and the California Aqueduct. These two large washes carry the bulk of rainwater runoff along the project area and they are critical areas for foraging and travel for local fauna. Impacts include loss or degradation of plant communities and habitats, noise and air pollution, light and glare, increased runoff and erosion and "road kills." There are three main areas of potential impacts 1) State Route 138 widening will create a greater barrier to faunal movement (for food, mating, etc.) and migration; 2) Some of the Joshua Trees adjacent to the roadway will have to be removed during construction and; 3) The deterioration and intrusion within the washes vis-à-vis grading and increased runoff along the route (especially Little Rock and Big Rock washes).

The Desert tortoise is a listed threatened species by the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) have listed the tortoise as endangered. The Bureau of Land management has ranked areas within the historic range into categories, depending on the existing populations. The State Route 138 highway widening project lies south of a Category III area. A Category III area indicates a very low population of known tortoises within the area. Based on historical information and the preliminary surveys conducted during the Spring 1998, the proposed widening most likely would not have an adverse effect on the Desert tortoise. Prior to construction protocol surveys would be done to insure that there are no Desert tortoise in the project area.

With the implementation of the following measures impacts to the above mentioned resources would be mitigated.

Measures to Minimize Harm

1. *A focused survey for the Burrowing owl species will be conducted approximately a year (or less) prior to the construction date. If the species is observed, construction will be limited to times outside of the breeding season which begin late March and nesting pairs usually have only a single brood per breeding season. The Caltrans District 7 Office of Environmental Planning, Natural Sciences Unit, would conduct these surveys.*
2. *Caltrans will conduct United States Fish and Wildlife Service (USFWS) protocol surveys for the Desert tortoise prior to the start of construction. In addition, conservation measures will be taken to assure that there will be no adverse effect on the Desert tortoise. Our Office has been communicating with USFWS. Caltrans plans to conduct informal consultation with the USFWS to meet the requirements of section 7 of the Endangered Species Act of 1974.*
3. *Caltrans would consider the potential off-site mitigation at either Saddleback Butte State Park or the Antelope Valley Indian Museum for Desert tortoise and Mohave ground squirrel habitat. Consideration will be made by the Caltrans District 7 Office of Environmental Planning, Natural Sciences Unit.*
4. *Impacts to Desert tortoise may require land banking as mitigation, Desert tortoise fencing, and/or construction of wildlife passageways.*
5. *Because there is significant historic data regarding the presence of the Le Contes thrasher within the project vicinity, further study would be performed during the breeding season. These surveys will be conducted by the Caltrans District 7 Office of Environmental Planning, Natural Sciences Unit.*
6. *The historic range and habitat for the Mohave ground squirrel is within the project vicinity. Because of the number of occurrences of this species listed by the NDDB within the project vicinity, further focused surveys and pre-construction surveys would be conducted in order to ensure that the species has not migrated into the project vicinity. These surveys will be conducted by the Caltrans District 7 Office of Environmental Planning, Natural Sciences Unit.*
7. *Caltrans will conduct surveys for the Mohave ground squirrel. Based on survey results, consultation with the CDFG will occur for appropriate mitigation measures including land banking/acquisition. Caltrans will continue to work with the CDFG and obtain all necessary permits prior to the commencement of work. Land banking*

to replace habitat could range from 1:1 to 5:1, e.g., for every acre (hectare) of habitat impacted; 1 to 5 acres would need to be purchased for mitigation.

8. *Although the Prairie falcon and the San Diego horned lizard were not observed within the project vicinity, pre-construction focus surveys would be performed in the conservation areas within the project vicinity. The Caltrans District 7 Office of Environmental Planning, Natural Sciences Unit, would conduct these surveys.*
9. *The rodent signs that are present in the project vicinity may be evidence of the more common varieties of the pocket mouse such as the California pocket mouse (Chaetodipus californicus) or other rodent species. Pre-construction trapping would be conducted to identify if there are any San Joaquin pocket mouse in the project area. The Caltrans District 7 Office of Environmental Planning, Natural Sciences Unit, will conduct this activity.*
10. *FHWA and Caltrans will consult with the United States Fish and Wildlife Service to ensure that any action they authorize is not likely to jeopardize the continued existence of any listed species in accordance with Section 7 of the Endangered Species Act.*

Comparison of Alternatives

Most of the alternatives are located in areas where a listed species, according to the Endangered Species Act (either Federal or California), has the potential to occur. If a listed species may occur within the project area, then Caltrans will be responsible to conduct studies to determine the species presence or absence as required by the resource agencies. If a listed species is found within the Area of Impact, the mitigation cost will increase.

1) Option{ XE "Option" } D and Option E{ XE "Avoidance Alternative E" } may require a biological monitor on-site, during construction, for parts of these alternatives. The anticipated project duration for each alternative{ XE "Alternative" } is not yet known at this time. Therefore, the estimated cost does not include a biological monitor on-site. The cost of a biological monitor could substantially increase the cost estimate for biological mitigation.
2) The implementation of box culverts within the design of the highways may be considered a measure to minimize harm to the flora and fauna. The location and design of the culvert may be considered a measure to minimize impacts of the highway.

4.8.1 Vegetation (14,24,27)

The desert ecosystem is very sensitive and even the smallest changes can disrupt it. The project area lies in the southwestern portion of the Mojave Desert. The project has several potential impacts{ XE "Potential Impacts" } with emphasis on vegetation{ XE "Vegetation" }. The Natural Environment Study for State Route 138 (Pearblossom Highway) From the City of Palmdale to State Route 18 in Unincorporated Los Angeles County suggests that there will be a substantial loss of native vegetation{ XE "Vegetation" }, such as Mojave Creosote Bush Scrub and Joshua Tree Woodlands and impacts to sensitive flora.

Invasive Species{ XE "Invasive Species" }

On February 3, 1999, President Clinton signed Executive Order (E.O.) 13112 and Caltrans issued a memorandum dated October 29, 1998, which promotes prevention and control of the introduction and spread of invasive species. Nonnative flora can cause substantial changes to

ecosystems, upset the ecological balance, and cause economic harm to our nation's agricultural and recreational sectors.

Under the E.O., Federal agencies cannot authorize, fund or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless all reasonable measures to minimize risk of harm have been analyzed and considered. Complying with the E.O means that federal-aid and federal highway program funds cannot be used for construction, revegetation, or landscaping activities that purposely include the use of known invasive plant species.{ XE "Invasive Species" }{ XE "Invasive Species" }{ XE "Invasive Species" }{ XE "Invasive Species" }{ XE "Invasive Species" }{ XE "Invasive Species" }

Table 26 Sensitive Flora in Project Area

Species	State/Federal Category	CEQA Determination	Comments
Pierson's Morning Glory *(Calystegia peirsonii)*	Federal species of concern/California Native Plant Society (CNPS) - species of limited distribution.	Not substantial	This species was not observed during surveys of the project area.
Pygmy poppy *(Canbya candida)*	CNPS 1B - rare or endangered in California and elsewhere.	Not substantial	This species was not observed during surveys of the project area.
Robinson's pepper-grass *(Lepidium virginicum, var. robinsonii)*	CNPS 1B - rare or endangered in California and elsewhere.	Not substantial	This species was not observed during surveys of the project area.
Rock Creek Broomrape *(Orobanche valida, ssp. Valida)*	Federal species of concern/CNPS 1B - rare or endangered in California and elsewhere.	Not substantial	This species was not observed during surveys of the project area.
Short-joint beavertail cactus *(Opuntia basilaris, var. brachyclada)*	Federal Species of Concern/CNPS 1B - rare or endangered in California and elsewhere.	Not substantial	These species were not identified within the project area.

Source: Caltrans District 7 Natural Environment Study January 2000

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

1. *Although the pygmy poppy was not observed during the various plant surveys performed to date, these plants are annuals and extremely small, and thus, additional surveys would be performed during the plant's blooming period; which is from April to May (USFS, 1995) and prior to construction.*
2. *The Robinson's pepper grass, Rock Creek Broomrape and the Short-joint beavertail cactus were not identified within the project area. There was not a positive identification for the rare variety of the cactus, additional surveys would be conducted prior to construction to ensure that this plant is not present.*
3. *Focused surveys will be conducted prior to the commencement of work, with the CDFG and other agencies notified of the surveys results. Impacts from this project to these plants will be avoided, minimized, and if necessary mitigated. To avoid the impacts, if sensitive plant species are found within the project site, then the plants will be flagged and avoided if possible. If the plants are found within the temporary construction area, the plants will be flagged and all measures possible will be taken so that the plant is not removed nor the immediate soil vicinity disturbed. If, however, the plant will be impacted by ground disturbing activities around the plant, then the plant may be relocated. For mitigation of the project's impacts, Caltrans will consider appropriate land acquisition if the survey results and consultation with CDFG determine it is required.*
4. *For effects onto the habitat of drainage areas, Section 404, 401, and 1601 permits{* XE "Permits" *}/approvals will be obtained by the Caltrans District 7 Office of Environmental Planning, Natural Sciences Unit. Conditions may include one or more of the following items:*

a) *Handling of sensitive species, if found within the vicinity of the construction area is limited to a qualified biologist.*

b) *Fencing will be placed along the alignment. It will serve two purposes: (1) Define the limits of temporary construction impacts, as well as protect environmentally sensitive areas, and (2) prevent sensitive wildlife such as coast horned lizards from drifting into the work area.*

c) *If unknown sensitive species are encountered after construction has commenced, the project will be halted until after consultation with the appropriate resource agencies.*

d) *Any vegetation{ XE "Vegetation" } that is removed will be replaced in accordance with Caltrans policy. A Vegetation Replacement Mitigation Plan will be prepared for onsite mitigation. Caltrans District 7 policy dictates that native flora removed from the site, whether planted or natural shall be replaced at a 10:1 ratio. This ratio is generally lowered for extremely large projects and if larger plants are used in the revegetation plan.*

e) *Planting should be done between October and March. This is the optimal plant establishment period for this biotic community.*

f) *Revegetation should be completed within one year after construction is completed.*

g) *Vegetation monitoring will be conducted for five (5) years to determine success of the revegetation plan. Caltrans will prepare a mitigation plan that will include restoring the site, planting, maintenance and monitoring to ensure an appropriate level of success.*

h) *The revegetation plan will include the plant palette, quantities and a drawing showing the plant locations.*

5. *Revegetation of all areas temporarily impacted during construction activities, particularly drainage areas and other areas with substantial biotic diversity and density. Revegetation will be performed both on-site and off-site. Plans for this activity will be prepared by the Caltrans District 7 Office of Environmental Planning, Natural Sciences Unit and the Caltrans District 7 Division of Landscape Architecture.*

6. *Off-site acquisition for permanent impacts, particularly for areas with valuable biological resources, such as drainage areas, will be considered. The amount of land depends on the quality and quantity of habitat impacted.*

7. *A Desert Vegetation Preservation Plan must be submitted for the review and approval of the City of Palmdale. The plan will identify Joshua tree locations within the project area and recommend additional management efforts in order to remain consistent with l{* XE "Invasive Species" *}ocal ordinances. The plan would be applicable to all Joshua trees within the jurisdiction of the City of Palmdale, which includes the sections of the proposed project between Avenue T and Avenue T-8.*

8. *Invasive species would not be introduced as a result of this project. This would be achieved through some Best Management Practices, including:*

    a) All equipment cleaning shall be conducted away from areas containing native plant assemblages

    b) All equipment will be cleaned prior to entering the work area from a distant locale, in this case outside the Antelope Valley

c) *All post-construction landscaping shall use species that, if not native, are not invasive*

d) *A post-construction inspection by a landscape Architect and District Biologist will be conducted to inventory if this goal has been accomplished. If not, eradication methods will be established into any post-construction mitigation plan.*

4.8.2 Wildlife{ XE "Wildlife" } Movement/Habitat Fragmentation (30,31)

Wildlife{ XE "Wildlife" } Corridors{ XE "Wildlife Corridors" }

Wildlife{ XE "Wildlife" } corridors function as critical links between wildlife habitats. Many species during their life history require different habitats. Also, they may need to migrate due to seasonal changes, for breeding purposes, or possibly because of changes in forage conditions. Human activities may reduce habitat areas and displace species to other locations, which are often less desirable habitats. The Antelope Valley General Plan identifies two areas that are Significant Ecological Areas (see section 3.4). The areas are Little Rock Wash and Big Rock Wash. Little Rock Wash and Big Rock Wash are important, because they provide essential wildlife habitat and migration corridors.

Roads are considered to be a major impediment to wildlife movement due to the hazards the wildlife face trying to cross the roads. Within the State Route 138 study area, there are several major wildlife corridors. Frequently, riparian corridors are used for wildlife movement between habitats. Within the State Route 138 study area, the more significant of these corridors are Little Rock Creek/Wash, and the Big Rock Creek/Wash. The California Resources Agency and the Department of Parks{ XE "Parks" } and Recreation have determined that the bridges at Little Rock Creek/Wash and Big Rock Creek/Wash are sufficient to maintain a functioning wildlife corridor for both small and large animals.

Measures to Minimize Harm{ XE "Measures to Minimize Harm" **}**

1. *Prior to construction further studies will be performed to determine the level to which other washes and drainages may be used by wildlife.*
2. *Prior to construction the potential impacts{ XE "Potential Impacts" } of roads on pollinators (e.g. bees and moths) will be examined. A study will be conducted to determine whether widening the road will have a negative impact on the population{ XE "Population" } of pollinators that are needed by the plants in the area.*
3. *Prior to project work a study will be conducted in order to determine the impacts to wildlife. In our study, we propose to place tracking stations within Caltrans right of way at the locations that have the possibility of being used as wildlife crossings. These stations will be monitored for an interval of five days and nights. The results of this study will be forwarded to all the agencies prior to the start of work.*
4. *Isolation and fragmentation of natural open space areas should be prevented wherever possible.*
5. *Natural stream drainages often serve as important movement corridors for wildlife, they should be preserved wherever it is feasible to do so.*
6. *All drainage plans will be included in the final design phase, which will be completed after the environmental document has been finalized. Caltrans will consult with the CDFG, United States Army Corps of Engineers (USACE), California Regional Water*

Quality Control Board (CRWQCB), and the USFWS at the final design phase in regards to drainage issues. In addition, Caltrans will be responsible for obtaining permits from the resource agencies including the USACE, CRWQCB and CDFG for impacts to the wash areas.

7. *Biological monitoring for bats at Big Rock Wash Bridge would be done prior to the construction date. If bats are using Little Rock Wash Bridge as day roots during the breeding season, the bridge construction work will not take place during this critical bat season. To mitigate for the impacts to bats, the new bridge design will include structures, such as wood panels, attached under the bridge for use by the bats.*
8. *When possible, bird-nesting season will be avoided. If work must be conducted during bird nesting season, then pre-construction surveys will be conducted. If nests are found all work will stop until the agencies have been notified. The nest area will be flagged. Work area limits will be set by the appropriate agency (for example 500 feet (152.4 m) for raptors).*

Comparison of Alternatives{ XE "Alternatives" }

The magnitude of environmental impacts{ XE "Environmental Impacts" } varies somewhat among alternative{ XE "Alternative" } alignments for the State Route 138 corridor. For instance, improving the existing alignment will probably have far less impact on wildlife corridors and migration patterns than a new transportation infrastructure. This is particularly important to consider in areas where sensitive wildlife species are likely to be present. Fencing and wildlife passageways may be necessary for alternatives involving new roadway and/or potentially impacting sensitive fauna; with the resultant additional costs{ XE "Costs" } for construction of these items and ongoing maintenance.

Biological Issues

Listed below are key issues that were considered in evaluating each alternative{ XE "Alternative" }'s overall impact:

- Waterways – Potential degradation of washes and other waterways throughout the area of impact were evaluated for each alternative{ XE "Alternative" }. Locations shown as blueline streams on USGS maps generally consist of greater biota diversity and have to be evaluated carefully to avoid and minimize impacts. More extensive habitat replacement and restoration activities will be needed along these washes and other drainage areas. The largest of areas are designated as Significant Ecological Areas (SEA's) by the County of Los Angeles and/or designated as Conservation Areas by the BLM. For example, Little Rock Wash and Big Rock Wash are SEA's and BLM Conservation Areas.
- Sensitive species – Impacts to sensitive flora and fauna and the proximity of alignments to the historic range and habitat for sensitive species were evaluated to determine which alternative{ XE "Alternative" } would avoid or minimize impacting existing populations{ XE "Populations" } of these species to the greatest degree.
- Habitat fragmentation and wildlife corridors – habitat fragmentation and loss or degradation of wildlife corridors were other factors considered to determine relative impacts each alternative{ XE "Alternative" } would have on habitat reduction and wildlife migration patterns.

- Native vegetation{ XE "Vegetation" } – substantial loss of native vegetation{ XE "Vegetation" }, such as mojave creosote bush scrub and Joshua tree woodlands is likely to occur with any of the alternatives selected. Native plant diversity, plant sizes, and densities were compared among the alternatives to establish relative impacts to the desert ecosystems. Impacts to joshua trees and creosote bushes are particularly significant.
- Flora and fauna diversity – Potential reduction in species' variety and densities within the area of impact was also considered among the alternatives. Typically, areas that become highly disturbed by human activities will experience a reduction in wildlife species (many animals will shy away from the activity) and non-native plant species will begin to out compete native vegetation{ XE "Vegetation" }. Exotic vegetation{ XE "Vegetation" } has become a major problem in the southwest, e.g., non-native plants invading Nevada sagebrush range lands are more easily ignited by strikes of lightening and have caused huge, uncontrolled wildfires (Boxall, October 24, 1999).

Alternative 1 Design variations A: South of Llano del Rio Hotel and B: South of Llano del Rio Hotel and North of U.S. Post Office

Improving the existing State Route 138 between State Route 14 and State Route 18 involves widening of an existing facility only, and as such, sensitive biological resources are much less likely to be impacted than with the other proposed alternative{ XE "Alternative" } alignments. Habitat along many areas of State Route 138 has been highly disturbed and degraded by human activities.

Although native vegetation{ XE "Vegetation" } is dominant, a substantial amount of non-native vegetation{ XE "Vegetation" } may be found along a large percentage of the route. As expected, the amount of disturbed and degraded habitat is most prevalent near the more developed areas.

The eastern portion of this alternative{ XE "Alternative" } appears to be just below the area identified by the Bureau of Land Management (BLM) as Desert tortoise Management Category III. Category III has very low densities of tortoises and it is unlikely a Desert tortoise will be found. However Caltrans would coordinate closely with the USFWS to determine any appropriate mitigation.

In addition, this alternative{ XE "Alternative" } crosses Little Rock Wash and Big Rock Wash, considered Significant Ecological Areas (SEA's) by Los Angeles and Conservation Areas by the BLM. Activities impacting these locations will require coordination{ XE "Coordination" } with these agencies, as well as the resource agencies, for the 404, 401, 1601 permits{ XE "Permits" }/approvals.

Design variation C: South of Llano del Rio Hotel

Design variation C involves all the features of alternative{ XE "Alternative" } 1, with the exception of the Llano del Rio Site. In this area a new alignment will be constructed 393.7 ft (120 m) to the south of the Llano del Rio Site with a raised profile of 15 ft (4.6 m). In this area, a portion of the alignment will involve constructing a new facility over relatively undisturbed native vegetation{ XE "Vegetation" }. This variation would result in habitat fragmentation and

create a barrier to wildlife movement. The distance of the new alignment would be approximately 6300 ft (1900 m).

Design variation{ XE "Option" } D: Avenue V, Fort Tejon and Avenue V-8
Design variation D involves all the features of alternative{ XE "Alternative" } 1, with the exception of the Littlerock area. In this area, a portion of the alignment will involve constructing a new facility over relatively undisturbed native vegetation{ XE "Vegetation" }. The distance of the new alignment would be approximately 26,500 ft (8000 m).

New roadway segments not only permanently reduce a less disturbed habitat than widening activities, but also fragment the habitat and create barriers to wildlife movement through out the area impacted. Wildlife{ XE "Wildlife" } corridors and migration patterns will be impacted; the resource agencies may require fencing and/or wildlife passageways along the new roadway segments.

Design Variation{ XE "Option" } E: Avenue V
Design Variation E involves all the features similar to Alternative 1, with the exception of the Littlerock area. Similar to design variation{ XE "Design Variation" } 4 a portion of the alignment in the Littlerock area will involve constructing a new facility over relatively undisturbed native vegetation{ XE "Vegetation" }. The distance of the new alignment would be approximately 29,000 ft (8900 m).

As already noted new roadway segments not only permanently reduce a less disturbed habitat than widening activities, but also fragment the habitat and create barriers to wildlife movement through out the area impacted. Wildlife{ XE "Wildlife" } corridors and migration patterns will be impacted; the resource agencies may require fencing and/or wildlife passageways along the new roadway segments.

Alignment with the Least Biological Impact
An assessment was made of the above to determine which alternative{ XE "Alternative" } would have the least impact on the natural resources within the Mojave Desert. Clearly, Alternative 1 – Design variations A and B have the least impacts to natural resources of the five (5) alignments based on the following general factors:

- Alternative 1 – Design Variations A and B involves the least amount of new facility construction
- This alternative{ XE "Alternative" } is along an area that is more urbanized, disturbed, than the other alternatives
- This alternative{ XE "Alternative" } is estimated to involve less acres of habitat that will be permanently impacted by the roadway improvements. The exact number of acres will be determined during final design.

An evaluation of the key environmental issues is provided below:

- Waterways – The potential increase for an increase in degradation of washes and other waterways throughout the area of impact would be greater for Design Variations D and E because these alignments would double the number of existing culverts to accommodate washes crossing both State Route 138 and the new alignment within the Littlerock area.

- Sensitive species - Since many areas of State Route 138 are already fairly disturbed and ruderal in nature, impacts to sensitive flora and fauna would generally be less than the alternatives involving new roadway segments through the desert ecosystem.
- Habitat fragmentation and wildlife corridors – Clearly, Alternative 1- Design variations A and B are the only alternatives, which will not dramatically increase habitat fragmentation and loss or degradation of wildlife corridors.
- Native vegetation{ XE "Vegetation" } - It is more likely that because Design variation C and Design variation{ XE "Alternatives" } D and E involve new roadway segments that the loss of native vegetation{ XE "Vegetation" } will be greater with these alignments. Additionally, during surveys, native plant diversity, plant sizes, and densities were generally greater for Design variation{ XE "Options" } D and E.
- Flora and fauna diversity - Alternative 1 – Design variation A and B already show a substantially reduced variety and density in species within the area of impact in comparison to the other alternatives. Widening along the existing State Route 138 will primarily impact areas already disturbed.

Assuming that all additional pre-construction biological surveys support current data, it is likely that as long as measures to avoid and minimize biological impacts are employed, impacts of constructing Alternative 1- Design variation A and B may be reduced to a level of insignificance under CEQA.

4.8.3 Wetlands (14)

The wetland delineation that was completed for the State Route 138 widening project identified three locations for potential wetlands. The locations identified are Little Rock Wash, Big Rock Wash, and near the State Route 138 and State Route 18 junction. The wetland delineation completed for the State Route 138 widening has identified one area that qualify for both State and Federal wetlands and two areas that classify only for State wetlands. Potential impacts would result from new bridge piers, and increased shading that would be caused by the new bridges in the project area.

At the time of the field survey, Little Rock Wash consisted of areas that were dry, with the eastward channel having flowing water (25 August 2000). From the past observations it appears that Little Rock Wash has water flowing year round. Although speculative, it may be that the dam upstream releases small amounts of water year round there-by providing a year round source of water. The soil was hydric, with riparian vegetation in the area mostly along the edges of the current water flow. A profile of the soil at 0-1 inch, according to the Munsell soil color chart (1994), shows a value of 2.5/1 5BG Gley with greenish black color. As a result of the water flowing, it appears hydric soil and hydrophtic vegetation has formed. The total cover of riparian vegetation is approximately 30% with the dominant vegetation consisting of mature stands of mulefat and some sycamore trees. The Federal wetland jurisdiction is delineated to approximately five feet from the water edge. Outside of the streamflow there is approximately 30% vegetation cover. The area under Little Rock Bridge does meet the three criteria and is considered a Federal and State wetland.

At the junction of Route 138 and 18, Graham Canyon Wash was shown on the U.S.G.S. topography as ephemeral blue line stream. On the south side of State Route 138, which is upstream, a culvert runs underneath Route 138. This culvert has created an area where water

collects, at times, due to insufficient culvert capacity. This has created an area that appears to be a possible wetland. Within this area the total plant coverage was approximately 95%. Species found included chia (*Saliva columbariae*), four winged salt bush (*Artiplex canescens*), and two sub-species of rabbitbush (*Chrysothamus nauseosus* spp.). In comparison, the upland surrounding this area had a plant density/cover of approximately 70%. Within the area of the wetland assessment, the soil had no organic matter and no hydric features other than cracking on the surface. A profile description showed at 0-3 inches the value/chroma was 3/2 2.5YR with dusky red colour. The 3-10 inch profile had a value/chroma of 3/4 2.5YR with a dark reddish brown colour. The vegetation was dominated by non-riparian species. Curly dock was the only wetland indicator species, which consisted of approximately 5% of the total vegetation. The vegetation was dominated by non-riparian species. This area is a State wetland based on hydrology but is not a Federal wetland.

Big Rock Wash was examined and also underwent wetland delineation. Big Rock Wash is a highly disturbed area due to maintenance activities. The area surrounding Big Rock Wash has large cobbles, with no water flowing during the assessment. The riparian vegetation in Big Rock Wash was sparse with a few patches scattered throughout the area. Due to maintenance activities no hydric soil or organic matter was present. Fine sand was present on top of the cobble and boulders. Since Big Rock Wash did not meet the soil criteria, it would not be classified as a Federal wetland: however it does meet the criteria for a State wetland.

The impacts created from building new bridges in the project area can be mitigated, and the mitigation would be established in the permit consultation with the U.S. Army Corps of Engineers, California Department of Fish and Game, and the State Water Quality Control Board. This project would require a 404 permit from the U.S. Army Corps of Engineers, a 401 permit from the State Water Quality Control Board and a 1601 Streambed Alteration Agreement from California Department of Fish and Game.

4.9 Growth{ XE "Growth" } Inducing{ XE "Growth Inducing" } (35)

NEPA regulations 40 CFR Section 1508.8 calls for a discussion of a project's indirect effects, which "… may include growth inducing effects and other effects related to induced changes in the pattern of land use, population{ XE "Population" } density and growth rate, and related effects on air and water and other natural systems, including ecosystems." The California Environmental Quality Act (CEQA) guidelines (15126[a]) specify that "… significant environmental effects of the proposed project…" would include"…changes induced in population{ XE "Population" } distribution, population{ XE "Population" } concentration, the human use of the land (including commercial{ XE "Commercial" } and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, scenic quality, and public services."

The Antelope Valley General Plan 1986 lists the following development-related principles:

- All development in the rural Communities of Littlerock, Pearblosssom and Llano must be of an infill nature.
- Commercial development should coincide with the rural western motif of the communities.

The Antelope Valley General Plan recognizes the unincorporated areas of Littlerock, Pearblossom, and Llano as areas of low-density lifestyle that characterizes much of the Antelope Valley. The General Plan promotes the protection of the existing rural communities as well as recognizes the urban centers such as Palmdale in the Antelope Valley. These rural communities offer an attractive low-density life style integrated into the natural environment and with the proposed project it should be maintained at the same level it is currently at.

The City of Palmdale is strategically located with respect to the Antelope Valley, San Joaquin Valley, Owens Valley and the San Fernando Valley/Los Angeles Basin. With direct access to State Route 14 (Antelope Valley Freeway) and Highway 138, as well as rail access via the Southern Pacific Transportation{ XE "Transportation" } Company, Palmdale is readily accessible to commuters and future commercial{ XE "Commercial" } or industrial users. The City of Los Angeles Department of Airports owns approximately 17,500 acres earmarked for a regional airport within the City of Palmdale. Once the regional airport is built there will be a significant increase in population{ XE "Population" } and commercial{ XE "Commercial" } properties due to an increase in employment and future needs. Palmdale has experienced the highest growth rate of any city in California since 1980 (586%). Although the rate of growth has diminished from 1989 to the present, indications are strong that residential growth will continue, due to relatively low housing{ XE "Housing" } prices as compared with the rest of Los Angeles County.

The City has been in a development boom with the potential to be an example to the region in terms of growth patterns. The likelihood is greatest that future growth in the project area would occur in conformance with local plans and policies, rather than in new, induced areas as a result of widening State Route 138. The proposed project has been designed to facilitate growth. Planned growth may also occur due to the improvements to the transportation facility. It should be noted that growth and land use decisions are the responsibility of local jurisdictions and are under their control

In summary, the proposed project has been designed to accommodate but not exceed the traffic{ XE "Traffic" } volume capacities anticipated in 2025; the No Action{ XE "No Action" } Alternative is expected to operate at unacceptable levels of service. Additionally, the proposed project is consistent with the growth and planning goals of the local jurisdictions, and with the "pre-existing" planned growth in the area. Caltrans, the City of Palmdale and Los Angeles County have been in close coordination{ XE "Coordination" } for several years identifying the need for the project. Based on this information, and in accordance with NEPA and CEQA, it is concluded that the proposed project facilitates planned growth and would not induce growth.

4.10 Lifestyles, Neighborhood Stability (36) {tc "8.11 Affect Lifestyles, Neighborhood Character or Stability; Divide or Disrupt an Established Community? (34, 36) " \l 3}

Potentially disruptive effects to existing residential areas near or adjacent to State Route 138 would be related to the modification of neighborhood accessibility and circulation{ XE "Circulation" }, visual effects, and noise effects.

Residential areas presently exist adjacent to or near the project right of way in all of the communities along the corridor. These areas would experience short-term construction related impacts such as increased truck traffic{ XE "Traffic" }, noise, dust{ XE "Dust" }, visual impacts, detours{ XE "Detours" }, etc.

The Antelope Valley General Plan recognizes the unincorporated areas of Littlerock, Pearblossom, and Llano as areas of low-density lifestyle that characterize much of the Antelope Valley. The General Plan promotes the protection of the existing rural communities as well as recognizes the urban centers such as Palmdale in the Antelope Valley. These rural communities offer an attractive low-density life style integrated into the natural environment and with the proposed project it should be maintained at the same level at which it currently is.

4.11 Elderly or Specific Interest Groups, Housing and Employment{ XE "Employment" } (39)

The only change would be the distance that a disabled or elderly person would have to travel across State Route 138. Instead of disabled or elderly person crossing a two-lane highway they would now have to cross a four-lane highway. To assist the elderly and disabled across the road, a traffic signal will be provided at 82nd Street East. Sidewalks will be provided on both sides of the highway in the Community of Littlerock. In Pearblossom a sidewalk will be provided on the south side. Median refuge areas to assist those crossing the highway will be considered at various intersections. Locations and sizes will be determined during the design phase of the project.

4.12 Housing and Employment{ XE "Employment" } (40,41)

Relocations: Commercial and Residential

Along the proposed project area there will be relocation and acquisition of commercial{ XE "Commercial" } and residential property. The majority of parcels to be acquired are partial

acquisitions and commercial{ XE "Commercial" } properties. The majority of businesses{ XE "Businesses" } are retail stores or shops that employ skilled and non-skilled workers. The relocation of a few businesses{ XE "Businesses" } will be required and the remaining businesses{ XE "Businesses" } will require temporary construction easements for the use of the property through construction completion. This impact would be minimal and temporary until construction is complete.

All displaced businesses{ XE "Businesses" } and farms will be subject to the Uniform Relocation{ XE "Relocation" } Assistance and Real Property Acquisition Policies Act of 1970, as amended in 1987. The Uniform Relocation Assistance Program was developed to help displaced individuals move with as little inconvenience and expense as possible, and all benefits and services will be administered to the general public without regard to race, color, national origin, or sex, in compliance with Title VI of the 1964 Civil Rights Act (42 USC 200d.et seq.). The Uniform Relocation Assistance program provides that:

> Caltrans will provide relocation advisory assistance to any person, business, farm, or non-profit organization displaced as a result of the department's acquisition of real property for public use. The department will assist displacees in obtaining replacement housing{ XE "Housing" } by providing current and continuing information on the availability and prices of houses for sale and rental units that are comparable, "decent, safe and sanitary". Non-residential displacees will receive information on comparable properties for lease or purchase.

The Business and Farm Relocation{ XE "Relocation" } Assistance Program provides aid in locating suitable replacement property, and reimbursement for certain costs{ XE "Costs" } involved in relocation. The Relocation Advisory Assistance Program can provide, when requested, a current list of properties offered for sale or rent, suitable for specific relocation needs. The types of payments available to business, farms and non-profit organizations can be summarized as follows:

- The expenses incurred in moving inventory, machinery, office equipment and similar business related personal property dismantling, disconnecting, crating, packing, loading, insuring, transporting, unloading, unpacking, and reconnecting of personal property.
- Payment for "actual direct" losses of personal property that the owner elects not to move.
- Expenses related to searching for a new business site could be reimbursed up to $1,000 for actual reasonable cost incurred.
- Re-establishment expenses relating to the new business operation.

Payment "in lieu" of moving expenses is available to businesses{ XE "Businesses" } which are expected to suffer a substantial loss of existing patronage as a result of the displacement, or if certain other requirements such as inability to find a suitable relocation site are met. This payment is an amount equal to the average annual net earnings for the last two taxable years prior to relocation. Such payment may not be less than $1,000 and not more than $20,000.

Following final design, final estimates of land taking would be made and access requirements would be established. Where possible, land exchanges would be investigated to reduce the effect of severed parcels.

Table 27 shows the number of single family residential, multi-residential, improved commercial{ XE "Commercial" } and non-profit residential buildings that will be acquired in the best case scenario.

Table 27 Best Case Scenario for Right-of-Way acquisition for the communities of Palmdale, Littlerock, Pearblossom and Llano.

	Littlerock		Pearblossom		Llano		Palmdale
	Full	Partial	Full	Partial	Full	Partial	All Partial
Single Family Residence	2	11	0	19	0	4	0
Multi-Residential	1	2	0	5	0	0	0
Improved Commercial	3	43	0	27	0	2	0
Non-Profit	2	4	0	2	0	2	0
All Partial [2]	RL-22, AG-4, VL-23, PL-2, I-0, U-8, E-1, CL-3		RL-14, VL-31, CL-40, I-1, IL-3,PL-1, MHP-1, AG-13		CL-5, VL-96, IL-2, I-1, RL-5		RL-2, AG-1

Source: Draft Relocation{ XE "Relocation" } Impact Report 1998

Table 28 Worst Case Scenario for Right-of-Way acquisition for the communities of Palmdale, Littlerock, Pearblossom and Llano.

	Littlerock Full Takes	Pearblossom Full Takes	Llano Full Takes	Palmdale Full Takes
Single Family Residence	13	4	1	0
Mu1ti-Residetial	3	1	0	0
Improved Commercial	25	16	1 (I)	0
Non-Profit	3	3	1	0

Source: Draft Relocation{ XE "Relocation" } Impact Report 1998

The following reflects the best and worst case scenarios for right-of-way acquisition from the Draft Relocation{ XE "Relocation" } Impact Report and are based upon Alternative 1 (widening along the existing alignment).

[2] RL= Residential Lot; AG= Agricultural; VL= Vacant Lot; PL= Parking Lot; IL= Industrial{ XE "Industrial" } Lot; U= Utilities{ XE "Utilities" }; CL= Commercial Lot; E=Easement

Littlerock

In Littlerock, 13 residential (best case) parcels will be impacted partially and 3 residential partials will be impacted fully and 52 improved commercial{ XE "Commercial" } and non-residential (best case) parcels will be impacted due to right-of-way requirements. The estimated breakdown of employees to be displaced in the community would be: 15 jobs displaced in Littlerock with best case scenario and 75 jobs displaced with worst case scenario.

Pearblossom

The new alignment of State Route 138 would shift the existing alignment to the north in order to reduce impact to commercial{ XE "Commercial" } and residential property. Therefore there will be no relocation impacts in the community of Pearblossom as seen in Table 27. Prior to the new alignment the community would have the worst case scenario as seen in Table 28. The number of partial takes in Pearblossom would be 24 residential properties and 29 commercial and non-profit parcels that would be impacted due to right-of-way requirements.

Llano

Llano will have a minor amount of displacement. Llano will have 4 residential parcels partially impacted and 5 improved commercial{ XE "Commercial" } or non-residential parcels partially impacted. The estimated breakdown of employees to be displaced in the community ranges from 0 jobs displaced in Llano in best case to 5 jobs in the worst case scenario.

The greatest displacement will rest on the Communities of Littlerock and Pearblossom. Llano will have a minor amount of displacement. For the study area as a whole, approximately 10 employees in the best case scenario would be displaced by the proposed project. In the worst case scenario the acquisition would result in 107 employees would be displaced. The City of Palmdale would not suffer any employee displacement.

The exact number of parcels that will be in the project right-of-way will be determined in the Final Relocation{ XE "Relocation" } Impact Report. As for the number of residential displacees they would be minimal and there would be no difficulty in finding replacement residential property within the project area that is affordable and accessible to public services.

Employment{ XE "Employment" }

The current commercial{ XE "Commercial" } property is directed towards the traffic{ XE "Traffic" } that passes along the existing State Route 138 corridor. The State Route 138 corridor brings business to the neighboring communities and continues to provide the economic base for these rural communities.

The number of commercial{ XE "Commercial" } properties affected by the project right-of-way leads to employee displacement. The anticipated job displacement in the project area was measured with the Southern California Association of Governments (SCAG) Employment{ XE "Employment" } Forecasts for Los Angeles County for the year 2000 and 2010 using information from the 1990 US Census Data. According to the projected SCAG Employment Forecasts by Census Tracts there will be 3,114 jobs available in these communities for the year 2000 and 5,548 jobs by the year 2010.

It should be understood that when employment displacement would occur initially most, if not all of the displaced employees can be expected to find employment, either in the relocated business itself or at a similar business in another location. Given the nature of the affected

business, the ability of the marketplace to absorb employees, the relocation efforts of the right-of-way staff, and the support of the affected communities, it is anticipated that the actual loss of jobs would be minimal.

4.13 Minority (37)

This Environmental Impact Report/Environmental Assessment considers not only The *National Environmental Policy Act* (NEPA) requirements, but also those of Title VI (see Appendix F) of the *Civil Rights Act of 1964*, as amended, as well as *Executive Order 12898*.

Title VI requires that no person, because of race, color, religion, national origin, sex, age, or handicap, be excluded from participation in, denied benefits of, or be subjected to discrimination by, any federal aid activity. *Executive Order 12898* broadens this requirement to mandate that disproportionately high and adverse health or environmental impacts{ XE "Environmental Impacts" } to minority and low-income populations{ XE "Populations" } be avoided or minimized to the extent possible. Implementation of the State Route 138 improvement project will not result in disproportionately high or adverse impacts on minority or low-income neighborhoods or communities. No denial or substantial delay in the receipt of benefits from Caltrans programs, projects, policies, or activities is expected to occur.

The Department of Housing and Community Development (HCD) gives income definitions for the housing{ XE "Housing" } needs in the area. The two income levels that are of interest are the very low income and the low income. The very low income for HCD is 50% of median income or below. In 1995-96, families earning less than $25,650 were classified very low income. The low income housing{ XE "Housing" } for HCD is between 50% and 80% of median income. For a family of four in 1995-96, low income was $41,050. The City of Palmdale is required by SCAG to provide sufficient housing{ XE "Housing" } for low and very low income. The proposed project will not affect any of the low-income housing{ XE "Housing" }. Table 16 shows the median family income.

In the project area all possible care was taken in the selection and processing of the Caltrans right-of-way. The project right-of-way took into account minority and low-income populations{ XE "Populations" } in order to avoid and minimize harm in the Communities of Palmdale, Littlerock, Pearblossom and Llano.

4.14 Property Values, Local Tax Base (41)

The proposed highway-widening project would create local short-term fiscal impacts as a result of right-of-way acquisition. The proposed build alternatives would have an impact due to the removal of acquired property from the local tax base. The acquisition of additional right-of-way and the resultant loss in taxable property, however, would be minimal compared to the total tax assessment base, since there is adequate space for relocation of displaced businesses{ XE "Businesses" } within the local vicinity.

Positive effects would occur if the inducement of better transportation{ XE "Transportation" } conditions encourages businesses{ XE "Businesses" } to relocate into the project study area. Property value in the project area would be expected to increase as a result of improved access, resulting in higher property tax yield. Business sales and volume in the area would also be expected to improve due to improved access for customers, resulting in higher sales tax yield.

Under the No Action{ XE "No Action" } Alternative{ XE "No Build Alternative" }{ XE "Alternatives" }, there could be some reduction in the tax base if increased congestion and poor access discourage consumers from coming to the area.

4.15 Community Facilities (42)

Equestrian Trails{ XE "Equestrian Trails" }

Currently equestrian trails have not been formally designed for the project area, but extensive plans exist for many proposed trails. The Los Angeles County Department of Parks{ XE "Parks" } and Recreations has developed a Master Plan that identifies 5 equestrian trail crossings and 2 more identified by Antelope Valley Trails{ XE "Trails" }, Recreation and Environmental Council (AVTREC) as of 1999. They are Littlerock Wash Bridge, 96th Street East, 121st East, Big Rock Wash Bridge and Largo Vista road. AVTREC has identified the two crossings at 89th Street East and 165th Street East. Caltrans has conducted equestrian counts along the project area. The results of the equestrian counts show low volumes of equestrian usage. Current equestrian counts would not justify the need for overpasses or bridges to accommodate equestrian use. The only location where the project proposes specific feature changes is at 96th Street East. Caltrans would continue to monitor the need for equestrian crossings.

The following is a list of measures to ensure the project design does not preclude implementation of the plans for trails. Antelope Valley Trails{ XE "Trails" }, Recreation and Environmental Council (AVTREC) is an advisory ground for the County Master Plan.

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

96th Street Crossing{ XE "Parking" }

1) *As part of the realignment of the 96th Street trail, the existing bridge over the California aqueduct at 96th Street East would have a separate equestrian/pedestrian structure constructed along the west side.*

121st Street Crossing

1) *As part of the Caltrans project design features for the highway-widening project the need for a demand signal will be studied.*

Big Rock Wash Crossing

1) *The County is requesting the use of the West Side of this crossing for equestrian trails*
2) *Caltrans will study the possibility of maintaining a 10-foot (3.0 m) clearance at this bridge and a path width of 8-ft (2.4 m) to allow sufficient clearance and minimize possibility of rider being trampled if the horse jumps sideways. If sediment reduces clearance, Caltrans will study the possibility of signage on both sides of the trail, which will instruct equestrians to dismount and walk horses*
3) *With respect to safety & flood control, the county currently does not provide signage to discourage trail use during rains*

Littlerock Crossing

1) *The new bridge at this crossing will have 3% slope. Clearance will range from a 15 ft (4.6 m) width to 13ft (4.0 m) width, not accounting for sediment. It was noted by the County that the clearance at this location is sufficient for equestrian trails*
2) *In the case that the bridge is designed without a 10 ft (3.0 m) clearance, Caltrans will study the possibility of providing signage to instruct equestrians to dismount and walk horses and provide adequate path width in which to lead horses.*
3) *With respect to safety & flood control, the county currently does not provide signage to discourage trail use during rains*

The design and building of equestrian trails follow certain general standards and they would consist of:

1) Grades shall not exceed 10%, except that for distances less than 300 ft (91.4 m), 15 % shall be permitted to avoid switchbacks.
2) Drainage - provide surface drainage by rolling the grade and outsloping the surface, installing water bars (modified water bars or rubber water deflectors), and using metal or wood culverts or open rocks to provide cross drainage.
3) Clearing - trees and shrubs will be cleared to a minimum width of 8 ft (2.4 m), and overhead clearance shall be 10 ft (3.0 m), minimum, above the trail tread.
4) Trail{ XE "Trail" } tread width of 10 ft (3.0 m) is desirable where cut and fill is not required. A minimum width of 4 ft (1.2 m) is required, with 6 to 8 ft (1.82 m to 2.4 m) around corners and in hazardous areas.
5) Sharp switchbacks should be avoided. In areas where they are unavoidable, the trial should be structurally reinforced.
6) Based on the development plan, fencing shall be provided to confine equestrians to the trail where safety hazards or destruction of adjacent properties or vegetation{ XE "Vegetation" } may occur.
7) Surface county road crossings must have painted black and white crosswalk strips and warning signs to motorists, of the equestrians crossing the road.
8) Equestrian tunnel is to be a minimum of 8 ft wide (2.4) inside and 10 ft (3.0 m) high (head clearance) with a complete drainage system. The ingress and egress ramp to the tunnel must not exceed 15% grade. Concrete surface is to be rough broom finish. The construction will be the box culvert type.
9) All identification and directional signs shall be uniform throughout the project, and provided for safety and control.
10) All equestrian entrances are to have motorcycle barriers installed.
11) Natural character of the site shall not be disrupted.
12) All work shall conform to all governing codes and Los Angeles County ordinances and standard specifications for public works construction.
    a) Trails{ XE "Trails" } shall remain within the park boundary.
    b) Natural character of the site shall not be disrupted.
    c) Grades shall not exceed 10%; except that for distances less than 300 ft (91.4 m), 15% shall be allowable.

d) Trail{ XE "Trail" } tread width of 10 ft (3.0 m) is desirable where cut and fill is not required. Minimum width of 4 ft (1.2 m) is required, with 6 to 8 ft (1.82 to 2.4 m) around corners and in hazardous areas.
e) Sharp switchbacks should be avoided. In areas where they are unavoidable, the trail should be structurally reinforced.
f) Barriers, of materials compatible with the site, shall be provided to confine equestrians to the trail where conflict may occur with adjacent properties or with other uses, and in areas where they may destroy vegetation{ XE "Vegetation" } or elements desirable to the site.
g) Signs shall be provided as required for safety and control.

4.16 Public Utilities{ XE "Utilities" } and Services (43)

A Utility Impact Report has been completed for the State Route 138 widening project. The addition of two new lanes and passing lanes will result in the relocation of minimal amount of utilities in the project area. The affected utilities would be relocated in accordance with State law and regulations and Caltrans' policies. There would be ongoing coordination{ XE "Coordination" } between Caltrans, FHWA, affected agencies, and utility companies to minimize potential disruption of utility services.

The project site would affect the U.S. Post Offices that are located in the Communities of Pearblossom and Llano. The Post Office that is located in the community of Littlerock was already in the process of being relocated prior to the establishment of the project area. In the worst case scenario the Post Offices in the Communities of Pearblossom and Llano would be relocated. The areas that are going to be effected are: Avenue T to Longview Road; Longview Road to 165th St.; 165th St. to Avenue W; Avenue W to Largo Vista (PM 65.5, KP 105.4 to 67.3, KP 108.3) and from Largo Vista to Junction 18 (PM 67.3, KP 108.3 to 69.4, KP 111.68). Table 29 shows the location and type of utility being relocated along the project area.

Table 29 Sites of Utility Relocation{ XE "Relocation" } in Project Area

	Avenue T to Longview Road	Longview Road to 165th St.	165th St. to Avenue W	Avenue W to Largo Vista	Largo Vista to Junction 18
Overhead Facilities					
Edison	48 Power Poles 3 Guy Poles	13 Power Poles	19 Power Poles	53 Power Poles	32 Power Poles
GTE	38 Telephone Poles	-	-	-	-
Underground Facilities					
Southern California Gas Co.	1" gas line = 853 ft (260 m) 4" M. gas line = 7480 ft (2280 m)	-	-	-	-
Little Rock Irrigation District	2" line = 820 ft (250 m) 8"line = 6300 ft (1920 m) 6" line = 919 ft (280 m)	-	-	-	-
MCI		Fiber Optic Cable 4"duct= 57,414 ft (17500 m)			

Los Angeles County Water District	8" line = 820 ft (250 m) 6" line = 5610 ft (1710 m)	10" line = 787 ft (240 m) 6" line = 5314 ft (1620 m)	-	-	-
Pacific Bell	*Buried Cable* 2 Buried Cable = 11,650 ft (3550 m) 1 Buried Cable = 15,100 ft (4620 m) *Ducts* 2 Ducts = 11,650 ft (3550 m) 9 Ducts =656 ft (200 m) 11 Ducts = 6360 ft (1940 m) 13 Ducts = 656 ft (200 m) 15 Ducts = 1050 ft (320 m)	*Buried Cable* 2 Buried Cables = 755 ft (230 m) 1 Buried Cable = 328 ft (100 m)	*Buried Cable* 1 Buried Cable = 1180 ft (360 m)	*Buried Cable* 1 Buried Cable = 4420 ft (1350 m)	*Buried Cable* 1 Buried Cable = 2345 ft (715 m)

Source: Caltrans Utilities{ XE "Utilities" } Relocation{ XE "Relocation" } Study 11/22/99

4.17 Traffic and Circulation (44, 45,50)

Traffic Circulation

State Route 138 widening will enhance traffic{ XE "Traffic" } circulation{ XE "Circulation" } by improving the Level of Service{ XE "Level of Service" } (LOS) from level D/E to Level of Service B at the end of project completion. It will also benefit the local communities by optimizing the movement of people, goods, and services in a safe and efficient manner.

According to the California State CEQA guidelines, a project will normally have a significant effect on the environment if it will cause an increase in traffic{ XE "Traffic" } that is substantial to the existing traffic{ XE "Traffic" } load and capacity of the street system.

As compared to year 2025 baseline conditions, this project is expected to shorten work-trip travel times, increase average p.m. peak-hour highway speed, reduce daily hours of delay for all trips, and decrease the percent of all p.m. hours travel that are delayed, thereby improving regional mobility.

Parking {tc "Parking " \l 4}

The Los Angeles County Department of Public Works, Traffic and Lighting Investigations was contacted concerning parking issues in relation to the proposed project. They stated that they would analyze the parking issues on an "as needed" basis or towards the design stage of the project. Caltrans has been coordinating with the Keppel Union School District to develop a plan to mitigate impacts to their parking and circulation at Alpine Elementary School.

Traffic Signals

The traffic studies conducted as part of the Draft EIR/EA do not warrant installation of traffic signals within the project area. Caltrans would continue to conduct additional traffic studies through the design phase in order to determine if traffic conditions change and signals would be justified within the project area.

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

1. *A Traffic Management Plan (TMP) would be completed for the construction of the project during the final design preparation. Adequate public notices and posted announcements will be required to alert motorist about different construction stages and lane closures. Also posted announcements would be required to alert motorists/consumers that businesses{* XE "Businesses" *} are still open during construction.*
2. *Caltrans would provide access to off-site residential developments at all times during construction activities.*
3. *Caltrans will continue to work with Los Angeles County Department of Public Work on parking issues.*
4. *Caltrans will continue to coordinate with Alpine Elementary School*

4.18 Cultural/Historic{ XE "Historic Resource" } Resources (51)

According to the Historic{ XE "Historic Resource" } Property Survey Report, the Area of Potential Effect (APE) contained 124 properties and 5 bridges. The study found that none of the structures appear to meet the criteria of eligibility for inclusion in the National Register of Historic{ XE "Historic Resource" } Places. Likewise, Caltrans has evaluated the properties in accordance with Section 15064.5(a, 2-3) of the CEQA guidelines and determined that none of the resources are historical resources and for the purposes of CEQA. Furthermore, there does not appear to be a National Register-eligible historic district or cultural landscape within the APE.

While no prehistoric archeological sites were identified within the project area, the historic Llano del Rio Cooperative colony would be effected by the project. The remnants of the colony (which consists of approximately 2100 acres)lie on both sides of State Route 138 with visible ruins serving as key landmarks to identify the center of the colony. The Llano del Rio Colony is already recognized as California Historical Landmark No. 933 and, by virtue of that registration, is also listed on the California Register of Historical Resources. The colony also appears to be eligible for the National Register of Historic{ XE "Historic Resource" } Places as a discontiguous historic district. If project plans are changed, additional survey work will be required on any area not previously surveyed. If during construction, buried cultural remains are encountered, it is Caltrans policy that all work in that area be stopped until a qualified archeologist can evaluate the nature and significance of the find.

Section 106 of the National Historic{ XE "Historic Resource" } Preservation Act has established very specific guidance for finding that a project has an effect on a historic property. Section 106 requires such a finding:

> …when the undertaking may alter characteristics of the property that may qualify the property for inclusion in the National Register. For the purpose of determining effect, alteration to features of a property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered… An undertaking is considered to have an adverse effect when the effect on a historic property may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to:
>
> 1) Physical destruction, damage, or alteration of all or part of the property

2) Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;

3) Introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting

4) Neglect of a property resulting in its deterioration of destruction; and

5) Transfer, lease, or sale of the property… (36CFR80).

Under CEQA, a project would have a significant effect on the environment if it would disrupt or adversely affect any of the following:

- A historic or prehistoric archeological site
- A property of historic or cultural significance to a community,
- Ethnic or social group
- A paleontological site (except as a part of a scientific study).

All build alternatives would affect the Llano del Rio site. Alternative 1 – Design variation B would have the least impact.

Measures to Minimize harm

1. *Mitigation measures will be identified and considered through the public comment on this document and in completing consultation with the State Historic{* XE "Historic Resource" *} Preservation Officer pursuant to section 106 of the National Historic{* XE "Historic Resource" *} Preservation Act (16U.S.C. 470).*
2. *If during project construction additional cultural materials appear, work will stop in the immediate area. The District 7 Archaeologist will be notified upon such discovery and appropriate measures will be performed to mitigate the impacts to the resource. Work may only resume with approval from the Caltrans Archaeologist.*
3. *The site would be designated and managed as an Environmentally Sensitive Area (ESA).*
4. *Permanent fencing and vehicular gated will be installed as the first construction activity along this section of highway. These fences would extend along the north and south right-of-way boundary lines from 165th Street to 175th Street through the former urban core of the community. Vehicular gates would be placed to allow access to existing private dirt roads.*

4.19 Cumulative Effects (58)

Preparation of this section is in accordance with California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). The CEQA Guidelines, Section 15130, states that "cumulative impacts{ XE "Cumulative Impacts" } shall be discussed when they are significant. The discussion of cumulative impacts{ XE "Cumulative Impacts" } shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided of the effects attributable to the project alone." Under

40 CFR 1508.7, cumulative effects "which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions" shall be discussed.

The Antelope Valley General Plan and the Los Angeles County Growth{ XE "Growth" } Management Plan EIR were reviewed to determine whether the proposed State Route 138 project impacts were already included in the analysis. If not, the State Route 138 project impacts were then added to the forecasted impacts to determine the likelihood that cumulative impacts{ XE "Cumulative Impacts" } would occur.

Geology{ XE "Geology" } and Soils

Seismic hazards are experienced throughout Southern California, including in the project area. With or without the State Route 138 project, people would be exposed to such hazards as fault displacement/ground rupture, seismic groundshaking, liquefaction, differential settlement, subsidence, and landslides. The project would not increase or decrease these hazards, nor would it introduce additional population{ XE "Population" } into an area where these hazards exist. Thus, the project would not contribute to cumulative geology or soils{ XE "Soils" } impacts.

Land Use{ XE "Land Use" } and Socioeconomic{ XE "Socioeconomic" }

The Antelope Valley General Plan recognizes the unincorporated areas of Littlerock, Pearblossom, and Llano as areas of low-density lifestyle that characterize much of the Antelope Valley. The General Plan promotes the protection of the existing rural communities as well as recognizes the urban centers such as Palmdale in the Antelope Valley. The preferred alternative{ XE "Alternative" } would require acquisition of approximately 3 full takes and 41 partial takes of residential property through the Communities of Littlerock, Pearblossom and Llano. It would also require 5 full take and 82 partial takes of non-residential property through the Communities of Littlerock, Pearblossom and Llano. There is adequate replacement housing{ XE "Housing" } the area. Therefore, the project would not contribute to cumulative population{ XE "Population" } or housing{ XE "Housing" } impacts. Most, if not all, of the displaced employees can be expected to find employment, either in the relocated business itself or at a similar business in another location.

The project would provide short-term employment opportunities (construction) and contribute to an overall increased economic activity in the long term by improving accessibility within and to the project area. Thus, the project's contribution to cumulative economic impacts would be neutral to beneficial; depending on the ability to relocate displaced businesses in the local area.

Traffic and Transportation

By design, the State Route 138 project would have beneficial traffic and transportation impacts, and would not contribute to cumulative adverse impacts.

Air Quality{ XE "Air Quality" }

As a result of congestion reduction which would result from the project, the State Route 138 improvements would have a beneficial impact on air quality, and would not contribute to cumulative adverse impacts. The proposed project is included in the Regional and Federal Transportation{ XE "Transportation" } Improvement Plan and is consistent with the Regional Transportation Plan that further the goals of the Clean Air Act.

Noise{ XE "Noise" }

The majority of the project area is surrounded by open space. The noise-sensitive land uses that front State Route 138 are now, and would continue to be, exposed to adverse noise impacts{ XE "Noise Impacts" }. The only feasible form of noise abatement along State Route 138 is soundwalls. In some locations, however, such walls would block views of highway dependent business and may not be desirable. Since, the businesses{ XE "Businesses" } and residences have driveways and walkways abutting the highway, soundwalls would provide only 2-3 dBA of attenuation due to sound flaking. In addition, sight distance and sidewalk access requirements per Highway Design Manual section 1102.4, Noise{ XE "Noise" } Barrier location, cannot be satisfied with the placement of soundwalls in any reasonable location. If mitigation is not fully implemented, noise impacts{ XE "Noise Impacts" } related to State Route 138 improvements would contribute to the existing and growing noise impacts{ XE "Noise Impacts" }.

Biological Resources{ XE "Biological Resources" }

Habitat area along many areas of State Route 138 has been highly disturbed and degraded by human activities. Impacts to riparian vegetation{ XE "Vegetation" } will be temporary and mitigated based on coordination{ XE "Coordination" } with the responsible resource agencies. The proposed project has the potential to impact wildlife corridors. The California Resources Agency and the Department of Parks{ XE "Parks" } and Recreation have determined that the bridges at Little Rock Creek/Wash and Big Rock Creek/Wash are sufficient to maintain a functioning wildlife corridor for both small and large animals.

Archaeological/Historical Resources

The Llano del Rio site is within the Area of Potential Effect and is eligible for the National Register of Historic{ XE "Historic Resource" } Places. This site will be affected by the proposed project. Mitigation will be conducted after completing consultation with the State Historic{ XE "Historic Resource" } Preservation Officer pursuant to Section 106 of the National Historic{ XE "Historic Resource" } Preservation Act of 1966 (16 U.S.C 470).

Hydrology{ XE "Hydrology" }

Although present quality is satisfactory, there is a slow trend toward reduced groundwater quality, due to increased urban run-off, septic tank failures in the San Gabriel watershed, declining water tables, and an extensive perched water condition in the Lancaster sub-unit of the Antelope Valley Basin (this sub-unit presently supplies the majority of the pumped water supply in the Basin). The proposed project widening of Big Rock Wash Bridge would occur in Big Rock Wash and since the creek is seasonal there will not be any effects to the existing water quality{ XE "Water Quality" }. Also all work that will be required would be done during low flow season.

Hazardous Materials{ XE "Hazardous Materials" }

The State Route 138 improvements would affect existing hazardous materials within the project area by disturbing the areas where these materials are found. With implementation of hazardous materials remediation, impacts related to hazardous materials would be reduced to a less-than-substantial level on an individual and cumulative basis.

Visual Resources

The State Route 138-improvement project would result in very few changes in the aesthetic composition of the area. Views of the surrounding desert and mountains will not be obscured as no sound walls are foreseen along the route.

4.20 Farmland (26)

The U.S. Soil Conservation Service within the U.S. Department of Agriculture determined the farmland in the proposed area of State Route 138 widening which happens to fall under the Federal Farmland Protection Act. Prime farmland is land, which has the best combination of physical and chemical characteristics for the production of crops. It has the soil{ XE "Soil" } quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management according to the current farming methods.

Construction of any of the alternatives would result in conversion of approximately .14 to 1.03 acres of prime farmland designated by the United States Department of Agriculture's Natural Resources Conservation Service (NRCS) depending on the alternative{ XE "Alternative" } chosen. The farmland that would be converted is located between 72nd Street East and 75th Street East (PM 53.95, KP 86.82) and east of the California aqueduct in the proximity of 96th Street East (56.17, KP 90.39). According to the Farmland{ XE "Farmland" } Conversion Impact Rating Form AD-1006 that was done by the NRCS the total prime farmland in the project area represents 1.9% of total farmable land in Los Angeles County which is 56,883 acres as defined in the Farmland Protection Policy Act (FPPA). The percentage of affected prime farmland that will be converted directly by the highway widening project is 0.0019% and 0.00026% according to the Farmland Conversion Impact Rating Form AD-1006. Given the extremely small proportion of regional farmland to be converted by the project, the proposed project's impact upon prime farmland is not substantial based upon the score of 152 given to the farmland based on the criteria set by the NRCS scoring system (See Appendix H).

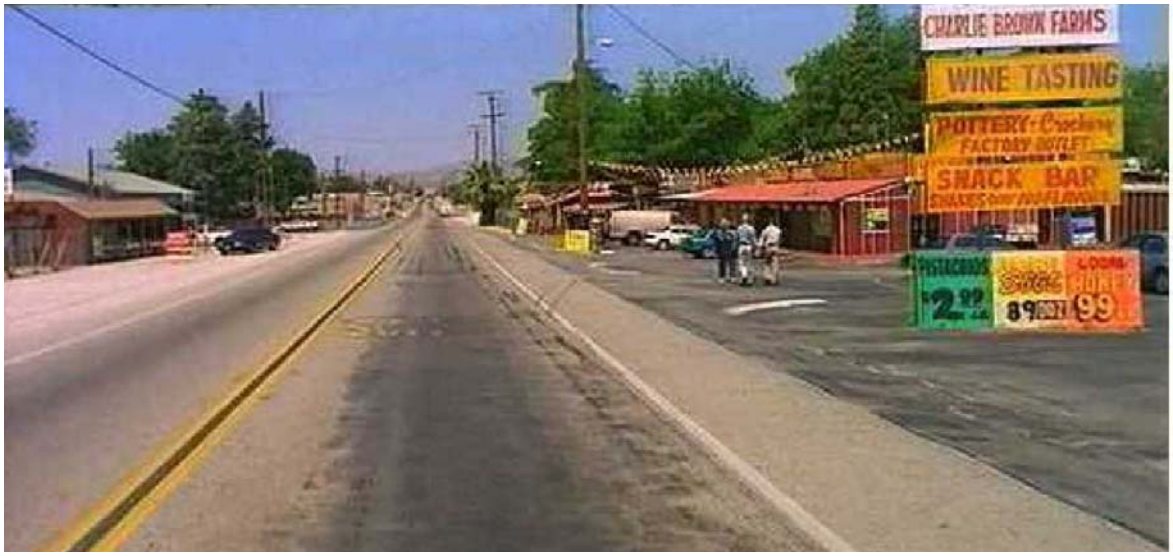
The NRCS classified the farmland "prime," but due to the relative value of the farmland and the Site Assessment, sites receiving a total score of less than 160 need not be given further consideration for protection and no additional alternatives need to be evaluated under 7 CFR 658.4 (c)(2). Therefore, no further coordination{ XE "Coordination" } with the NRCS will be required.

4.21 Visual Impacts (53)

Visual Impacts

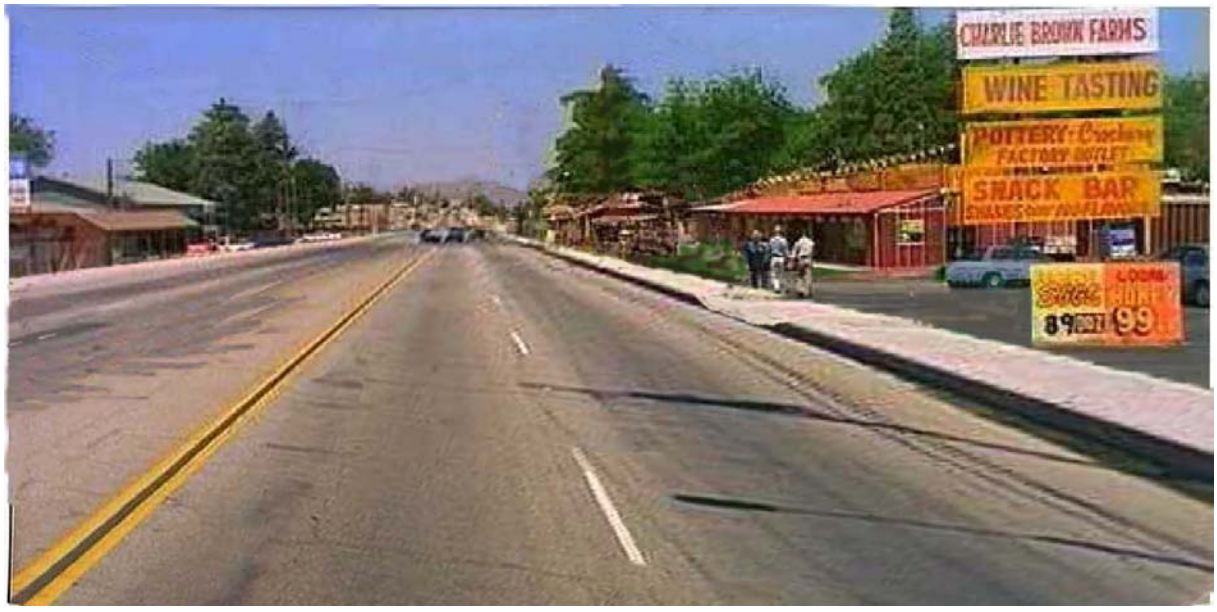
The Visual Impact Assessment was completed to evaluate the proposed construction of an additional mixed-flow lane in each direction on State Route 138 from Avenue T to the junction of State Route 18/138 (PM 51.4, KP 82.72 to 69.4, KP 111.68). The Visual Quality Analysis (VQA) of this proposed project site was performed to criteria set forth in The Visual Impact Assessment For Highway Projects (USDOT, FHA c. 1979). The visual quality{ XE "Visual Quality" } was analyzed for each viewpoint in terms of vividness, intactness and unity. Viewpoints were selected for both east and west direction and commercial{ XE "Commercial" } and rural viewpoints.

The first viewpoint was west bound on State Route 138 near 87th Street in Little Rock. According to the Visual Impact Study the visual quality{ XE "Visual Quality" } of this viewpoint was evaluated below average. The terrain is flat and featureless. The man-made elements are chaotic and overpowering. The widening of the highway will affect the street diagonal parking, but improve the egress and access to this commercial{ XE "Commercial" } zone parking. Telephone poles and roadside signs diminish the aesthetic experience. See Figure 13 and 14.



Source: Visual Impact Analysis April 2000

FIGURE 13 WESTBOUND STATE ROUTE 138 NEAR 87TH STREET-LITTLE ROCK EXISTING CONDITION



Source: Visual Impact Analysis April 2000

FIGURE 14 WESTBOUND STATE ROUTE 138 NEAR 87TH STREET-LITTLE ROCK PROPOSED CONDITIONS

The second viewpoint was eastbound on State Route 138 near 175th Street –Llano. The visual quality{ XE "Visual Quality" } of this viewpoint was evaluated above average. The terrain is flat and featureless and the desert vegetation{ XE "Vegetation" } is limited. The dominance of the San Gabriel Mountains is the most significant feature. The addition of one travel lane per direction will have no impact on the visual quality{ XE "Visual Quality" }. See Figure 15

FIGURE 15 EASTBOUND STATE ROUTE 138 NEAR 175TH STREET –LLANO

The Visual Impact Study states that after the proposed construction the change to the visual quality{ XE "Visual Quality" } would be slight change to an improvement for the viewpoints based on the visual quality{ XE "Visual Quality" } analysis criteria. The greatest visual impact will relate to the commercial{ XE "Commercial" } and residential parking access. The widening of the roadway will eliminate some roadside parking. The connection to the parking and roadway is important in terms of safety and the visual quality{ XE "Visual Quality" } of the commercial{ XE "Commercial" } zone.

The State Route 138 project would result in very few changes in the aesthetic composition of the area. Views of the surrounding desert and mountains will not be obscured as no sound walls are foreseen along the route.

4.22 Construction Impacts (54)

Construction Air Impacts

Impacts to ambient air quality would occur as a result of construction activities. Fugitive Dust and particulate matter, especially those less than ten microns in size (PM_{10}) emissions will be generated during project excavation and filling. Construction equipment and offsite vehicles used for hauling debris and supplies will also produce emissions during the construction. Project construction will be conducted in accordance with all Federal, State and local regulations that govern construction activities and emissions from those vehicles. The following mitigation measures{ XE "Mitigation Measures" } would be used to comply with AQMD Rule 403:

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

1. *Stabilize construction roads and dirt piles with water and/or chemicals.*
2. *Limit speeds on unpaved construction roads.*
3. *Daily removal of dirt spilled on to paved roads.*
4. *Cease grading and excavation activities when wind speeds exceed 25 miles per hour and during extreme air pollution episodes.*
5. *Require covering of all haul trucks.*
6. *Phased grading to minimize the area of disturbed soils{ XE "Soils" }.*
7. *Phased construction to minimize daily emissions.*
8. *Proper maintenance of construction vehicles to maximize efficiency and minimize emissions.*
9. *Prompt re-vegetation{ XE "Vegetation" } of road medians and shoulders.*
10. *Caltrans would use Best Management Practices when possible in the implementation of waste reduction and recycling programs to reduce the amount of construction/demolition and other wastes from landfills.*

Construction Noise{ XE "Noise" }

Construction of this project on State Route 138 may require use of equipment that has high noise characteristics. The equipment that would be used can range from concrete mixers producing noise levels of 80 decibels at a distance of 50 feet, to jack hammers over 90 decibels at the same distance. Normally construction noise levels should not exceed 86 dBA at a distance of 50 ft. To reduce the impact of these noises other measures should be used and are as follows:

Measures to Minimize Harm{ XE "Measures to Minimize Harm" }

1. *Construction activities should be confined to the daily period least disturbing to the neighboring communities.*
2. *Where there is close proximity to residential frontage, minimize operations from the City street side of the project to create the greatest distance between noise sources and residents.*
3. *Arrange the noisiest operations together in the construction program to avoid continuing periods of greater annoyance.*
4. *Require that equipment be installed and maintained with effective muffler exhaust systems.*

5.0 Section 4(f) Evaluation

U.S. Department of Transportation Act Section 4(f) Evaluation

State Route 138 Highway Widening

Project in Los Angeles County, California

State of California Department of Transportation

And

U.S. Department of Transportation

Federal Highway Administration

Pursuant to 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303

January 2001

5.1 Section 4(f)

Section 4(f) of the Department of Transportation{ XE "Transportation" } Act of 1966 prohibits the Secretary of Transportation from approving any program or project which:

> …requires the use of any publicly owned land from a public park, recreation area, or wildlife or wildlife and waterfowl refuge of national, state, or local significance as determined by federal, state, or local officials having jurisdiction thereof, or any land from an historic site of national, state, or local significance as so determined by such officials unless
> There is no feasible and prudent alternative to the use of such land, and
> Such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge, or historic site resulting from such use….
> (Department of Transportation Act of 1983, 49 U.S.C. Section 21)

Section 4(f) further requires consultation with the Department of the Interior (DOI) (comments from the DOI are included in Appendix J Response #A-5 Response to Comments) and, as appropriate other federal agencies, in developing transportation projects and programs, which use lands, protected by Section 4(f).

5.2 Proposed Action

The California Department of Transportation (Caltrans) proposes to widen State Route 138 from 2 to 4 lanes on the segment of the highway, which goes through the Communities of Pearblossom, Littlerock, Llano and the City of Palmdale, all within unincorporated Los Angeles County. The project involves widening along State Route 138 between Avenue T to the west and the Los Angeles/San Bernardino County line to the east. The preferred alternative involves the addition of one lane in each direction in order to make the existing highway a standard 4-lane conventional highway (for additional information see Section 1.0 in the EIR/EA). A more detailed description of the proposed project can be found in Section 1 (Purpose and Need) and Section 2 (Alternatives) of this document.

5.3 Description of Section 4(f) Properties Directly Used

5.3.1 Historic Resources

The historic archaeological site resource described below is identified in the Area of Potential Effect (APE) for the proposed State Route 138 widening project.

Llano Del Rio Colony Historic Archaeological Site

The Llano Del Rio Colony Historic Archaeological site{ XE "Historic Resources" } encompasses a 2095 acre area of the Antelope Valley and is bisected by the Pearblossom Highway (State Route 138) as shown on Figure 2 and Figure 9. Figure 16A shows the Llano Hotel in a northerly direction situated approximately 150 ft (46 m) from the highway. Figure 16B is a picture taken in the southerly direction facing away from the Llano Hotel into the core area of the colony. Access to the property is not restricted, but traffic studies done show

that the speeds in this area are between 65-70 miles per hour (104-112 kph). The lack of signs and vehicles traveling at a high rate of speed combine to prevent the commuter from realizing that there is a California Historical Landmark in such a remote area. Based on these two factors usage/visitation of this 4(f) resource is nearly nonexistent.

FIGURE 16A VIEW OF LLANO DEL RIO HOTEL ON NORTHSIDE OF STATE ROUTE 138

FIGURE 16B VIEW OF CORE AREA OF LLANO COLONY SOUTH SIDE OF STATE ROUTE 138

While little standing evidence of the colony remains, a number of key landmarks survive as visible ruins on the flat plain northeast of Big Rock Creek. At the center of the core area and highly visible from State Route 138 are ruins of the Llano Hotel, men's dormitory, and post office/business office complex. The hotel ruin is arguably the most important structure at the colony by virtue of the diverse social and political activities held there. See Figure 16C.

FIGURE 16C LLANO HOTEL (APPROX. 150 FT (46 M) FROM THE HIGHWAY)

At the north end of the core area are the ruins of the large barn, above ground pool/cistern, and root crop storage structure.

FIGURE 17 ROOT CROP STORAGE STRUCTURE (APPROX. 1340 FT (411 M) FROM HIGHWAY)

A masonry silo, smaller barn, and an adjacent stone building mark the southern limit of the core area.

FIGURE 18 MASONRY SILO, SMALLER BARN (APPROX. 2350 FT (716M) FROM HIGHWAY)

5.3.2 Recreational Area

At one time there were 46-acres of proposed parkland located within the Community of Llano and within the boundaries of the 2100-acre Llano del Rio Colony site. The land is in the northwest corner of the State Route 138/175th street intersection, which is adjacent to State Route 138 in the project area. The County of Los Angeles Department of Parks{ XE "Parks" } and Recreation acquired the land on August 2, 1960. The land is currently undeveloped and not used as a park. Also the proposed parkland is zoned for light agricultural and commercial use and is no longer considered a feasible park site. On March 1, 2000 there was a visual/field examination of the proposed park and there were no aesthetics to identify it as a park or proposed park. Phone consultation with James Barber Advanced Planning Section Head (with the County of Los Angeles Department of Parks and Recreation) and Caltrans staff in May and June 2000 determined that the County of Los Angeles Department of Parks and Recreations has no planned facilities for the proposed park. Caltrans has contacted the County of Los Angeles Department of Parks and Recreation in regards to purchasing the required amount of property needed for the highway widening project. In a letter dated September 19, 2000 from the Office of Project Development B it stated that Caltrans was interested in purchasing 3 acres of the proposed parkland. The letter from the Office of Project Development B also requested a concurrence letter. A letter sent on November 21, 2000 (Appendix M) from the County of Los Angeles Chief Administrative Office Real Estate Division recommended that both required properties that would be needed for the project be consolidated to minimize processing costs.

5.4 Impacts on the Section 4(f) Property

An avoidance alternative was not considered a viable option for the highway-widening project due to the large detour that would be required to go around the enormous historic property. A detour of that magnitude would greatly increase project costs, travel distance, and travel time. The Llano Site consists of a variety of property owners. According to the Los Angeles County parcel assessor maps about 75 parcels are listed as vacant desert land, 3 are government owned land and 12 are single family residents. The County of Los Angeles Department of Parks and Recreation owns one of the parcels. Because the Llano Colony site is so extensive, there is no practical way to completely avoid the site. Personal contacts with members of the Big Pines and West Antelope Valley historical societies resulted in a meeting on July 15, 1999 to discuss project effects on the colony and ways those impacts might be reduced. Members of both groups were concerned about the proximity effects on the Llano hotel ruins, which is one of the most visible and significant surviving built elements at the Llano site. Instead of encroaching on this ruin, these interested parties suggested expanding the highway exclusively on the south side of the existing alignment. In consultation with FHWA, Caltrans had submitted a Finding of Effect to the State Historic Preservation Officer On June 22,2000 in order to receive concurrence on our determination of the Llano Del Rio Cooperative Colony. An Memorandum of Agreement (MOA) was submitted to the State Historic Preservation Officer with a treatment plan in order to minimize the harm to the Llano del Rio Cooperative Colony.

5.4.1 No Build Alternative

The no build alternative has the least potential to affect the National Register eligible Llano site. However, this alternative fails to address the project objectives by not providing the necessary improvements for the projected safety and traffic conditions in the area. There have been a high number of fatalities along this segment of State Route 138. Hence, safety concerns stemming from use of the congested two-lane highway would not be addressed and no additional capacity would be provided. Flooding and debris accumulation would continue to be persistent safety problems. For this reason the No Build Alternative completely fails to meet the project's purpose and need and is dismissed.

5.4.2 Design Variation A

This alternative would expand the highway primarily on the south side within the existing highway right-of-way (ROW) in the core area of the Llano site and would then gradually curve back to follow the existing centerline on either side of the core. Design Variation A would increase the highway from two to four lanes, providing increased carrying capacity and addressing a selected range of safety problems. This alternative would address the problem of unsafe passing by offering an extra lane in each direction of travel.

The ROW for this alternative would encroach about 21 ft (6.5 m) closer to the standing ruins of the Llano Hotel and single men's dormitory, although the new edge of pavement would not move any closer to the ruins. Instead, the expanded ROW would be used to manage periodic flooding incidents consistent with existing maintenance practices. That would involve periodic grading to remove the buildup of debris and facilitate drainage. Design Variation A would directly impact 22 known archaeological features. Many of these features, particularly building pads, pit features, and refuse scatters can be expected to contain information that would help address important questions in history.

The reasons for dismissing Design Variation A stem from its failure to address several important safety concerns spurring development of this project. While less impacting to the Llano site than either of the viable project alternatives (design variations B and C), this alternative fails to meet the basic purpose and need of the project because it would not address several important safety issues including the currently inadequate sight distance caused by the undulating profile of the existing at grade facility, periodic flash flooding, and debris accumulation.

The existing pavement profile in the vicinity of the Llano colony site is a rolling profile that follows the existing grade, with some deep depressions originally designed to accommodate the passage of flush drainage flows. The dips and deeper depressions along this stretch have the effect of reducing the stopping and passing sight distance available to the user. Adequate sight distance is one of 13 mandatory controlling design criteria elements required in the design of highway facilities. The corrective measure for this condition is to raise the roadway profile, as needed, to eliminate the dips and smooth out the profile. Design Variation A fails to correct the vertical alignment deficiencies discussed above.

About 9% of the accidents on this stretch of highway are associated with wet pavement conditions. Design Variation A would not improve existing drainage conditions, continuing to allow flood waters, rocks, and other debris to flow over the roadway. Accidents due to flooding events would increase in number and severity if this alternative were selected because drivers would not expect to encounter such conditions on a multilane highway and would be travelling at greater speeds. For all of the foregoing reasons, Design Variation A does not meet the basic objectives of the project and has been dismissed.

5.4.3 Design Variation B (Preferred)

This alternative would expand the alignment to the south to avoid impacts to the Llano del Rio Hotel ruin and gradually curve back to follow the existing centerline on either side of the core area. The new alignment would shift to the south by approximately 19.7 ft (6 m) just east of 165th Street East and would continue east until it rejoins the existing highway west of 175th Street. This alternative would be elevated about 1.5 meters (5 feet) in the vicinity of the Llano hotel in order to address drainage requirements for a 25-year flood event. It would also have a total width of 233 ft (68 m) to accommodate required fill, and a series of 82 culverts and drainage channels that will be needed along both sides of the highway.

This alternative meets the project purpose and need, albeit below normal drainage design standards. This design would directly impact 42 archaeological features. Most of these features, particularly building pads, pit features, and refuse scatters can be expected to contain information that would help address important questions in history.

The elevated design would also create indirect effects associated with the introduction of a modest structure in the middle of the site. By truncating the view across this broad, flat cultural landscape, the ability to appreciate the scale and layout of the former settlement would be diminished. The elevated view from the structure would also make the features of the colony more visible in angled light, possibly causing an increase in looting activities. However, an elevation of the highway profile along the highway would accommodate drainage requirements and eliminate the rolling profile thereby improving the stopping sight distance and reducing the number of fatal cross-median accidents.

Design Variation B appears to be the least damaging choice among the two viable alternatives and is thus considered the preferred alignment. Design Variation A and the No Build alternative, while they would have fewer or no harmful effects on the Llano site, are not viable because they fail to address the fundamental safety and congestion problems prompting development of this project. Some of the adverse effects of Design Variation B can be reduced in severity through the implementation of mitigation measures summarized Section 5.6.1.

5.4.4 Design Variation C

Design Variation C would diverge from the existing alignment at a point just east of 165th street and then run parallel to it some 393.7 ft (120 m) to the south until it rejoins the existing alignment east of 175th street. It would be elevated 15 ft (46 m) to accommodate large culverts and have an average width of 290ft (88.4 m). This alternative would achieve a maximum

elevation of 15 ft (4.57 m) above the existing grade with a slope at a gradient of 1:6 to address a 100-year flood event. As a result, it would directly impact more archaeological features. A total of 53 features would be wholly or partly destroyed if this alignment is chosen.

In addition, Design Variation C would entail an even more massive and imposing structure than Design Variation B, causing indirect effects of the same types already discussed. Although Design Variation C is farther from the standing ruins at the center of the former colony, the massive scale of this elevated structure would be much more intrusive than the other build alternatives. It would also impact more features and may have a greater tendency to enhance the visibility of the site, potentially resulting in increased looting. These factors suggest this alignment would have the most potential to harm the significant values of the Llano site.

5.5 Avoidance Alternatives

5.5.1 No Build Alternative

This alternative retains the existing roadway conditions. It was rejected for the following reasons.

- It is not consistent with the long-term objective of reducing congestion and improving the overall operation and safety for State Route 138.
- It would not provide sufficient capacity for projected 2025 traffic volumes.
- It would not improve safety conditions or reduce the number of accidents and fatalities.[JL2]
- It would not facilitate the efficient movement of goods and services through the area.
- It would not complete the planned integrated regional transportation network between San Bernardino County and the Eastern Los Angeles County.
- It would be inconsistent with the 1990 STIP that allotted funds for Passing Lanes, Widen Bridge, and Channelization.
- It would not conform to the Air Quality Management Plan (AQMP)

This alternative would not solve existing transportation safety or maintenance problems. While this project would have no impact on the section 4(f) property, it does not address the project objectives.

5.5.2 Avoidance Alternative

Llano Colony Site

Because the Llano Colony is so extensive (2095 acres), there is no practical way to completely avoid the site. Routing the highway around the site would substantially increase project costs and would also increase travel routes and travel time, resulting in concomitant reductions in air quality. Also, the new location would result in substantial adverse social, economic and environmental impacts including such impacts as extensive severing of productive farmland,

displacement of a substantial number of families or businesses, serious disruptions of established travel patterns, substantial damage to sensitive species habitat. See Figure 19.

5.6 Measures to Minimize Harm

The general approaches that would be used to mitigate adverse effects to the Llano Colony are described in this section. That plan proposes treatment measures designed to address adverse effects on the full range of the values that qualify the Llano Colony for the National Register of Historic Places. The values that would be affected include the loss of significant data relative to Criterion D and diminishment of the integrity of the colony as a cultural landscape relative to Criterion A. To address the loss of these diverse values, an integrated program of historical and archaeological investigation, interpretation, and public involvement is planned. The goal of this work would be to gain a more complete understanding of the scope, layout, and characteristics of the colony as a whole and to recover important information that would be lost or diminished as a result of project implementation.

5.6.1 Mitigation Measures for Llano Colony Site

In order to mitigate the adverse effects to the Llano Colony site treatment measures have been developed to address adverse effects on the full range of the values that qualify the Llano Colony for the National Register of Historic Places. The values that would be affected include the loss of significant data relative to Criterion D and diminishment of the integrity of the colony as a cultural landscape relative to Criterion A. To address the loss of these diverse values, an integrated program of historical and archaeological investigation, interpretation, and public involvement is planned. The goal of this work would be to gain a more complete understanding of the scope, layout, and characteristics of the colony as a whole and to recover important information that would be lost or diminished as a result of project implementation. Caltrans staff will initiate a separate environmental enhancement and mitigation grant application for within Caltrans Right-of-Way at the Llano Hotel Site.

FHWA and Caltrans have consulted with the California State Historic Preservation Officer (SHPO) and notified the Advisory Council on Historic Preservation (Council) on the impacts to the Llano del Rio Colony site. FHWA, Caltrans and the California SHPO have reached an Memorandum of Agreement per Section 106 of the National Historic Preservation Act (Appendix A) that the adverse effects of the widening project on the Llano del Rio Colony site shall be mitigated in accordance with the provisions described in the *Treatment Plan for the Llano del Rio Colony in Los Angeles County, California (February 2001)*. To address the loss of the diverse values for which the Llano del Rio Colony site was evaluated an integrated program of historical and archaeological investigation, interpretation and public involvement has been proposed. The goal of this work will be to gain a more complete understanding of the scope, layout, and characteristics of the colony as a whole and to recover important information in the areas of community planning and the colony's metalworking industry that would be lost as a result of project implementation.

The Memorandum of Agreement (Appendix A) and Treatment Plan (available under separate cover) have the following guidelines and criteria:

1. *FHWA and Caltrans shall ensure that the approved treatment plan is fully implemented. All fieldwork required in the treatment plan would be completed prior to the start of any project ground-disturbing activities in the vicinity of the Llano del Rio Colony site. Other work required to carry out the purposes of the plan may continue after construction work begins. All work under the plan will be completed no later than three years after the fieldwork.*

2. *Public Interpretation. Following completion of the final technical report, Caltrans will develop public interpretive materials, covering historical and archaeological resources within the project area, and make the results of the treatment program available to the public through measures that minimally consist of a publication prepared for popular consumption.*

3. *Protective Measures: To prevent inadvertent damage to the portions of the Llano Colony site that lie outside of the proposed ROW, the site will be designated and managed as an Environmentally Sensitive Area (ESA). Prior to construction, the ESA will be specifically described in the plans, specifications, and estimates prepared to guide the construction effort. Monetary penalties will be specified for ESA transgressions. Permanent fencing and vehicular gates will be installed as the first construction activity along this section of the highway. These fences will extend along the north and south ROW boundary lines from 165th Street to 175th Street through the former urban core of the community. Vehicular gates will be placed to allow access to existing private dirt roads. Upon completion of the construction project the local maintenance supervisor will review the location of the permanent ESA with a Caltrans archaeologist.*

4. *Historical Research: The most important goal of the historical research will be to address effects on the cultural landscape of the colony under Criterion A. The additional research would concentrate on exploring previously untapped documentary sources and informants. Unexamined county, state, and federal records will be reviewed in an effort to trace leases, patents, claims, and assessments pertaining to community planning. Historical research will be conducted in order to aid in the identification and dating of materials recovered from excavations.*

5. *Fieldwork: Fieldwork will entail additional archaeological survey and excavations designed to recover important data that would be impacted by the project specifically concerning community planning and the colony's metalworking industry. The survey would establish the boundaries, arrangement, and characteristics of uninspected or cursorily surveyed portions of the colony's land. Excavations would focus on those building locations, pit features, and refuse scatters that will be directly impacted by the project and that can specifically address the research questions concerning community planning and the colony's metalworking industry.*

6. *Laboratory Work and Analysis: The laboratory work for this study will be completed following the fieldwork. All cultural materials, with the exception of delicate and perishable items, will be cleaned prior to cataloging and sorted by functional categories. Artifacts will be studied to see if they were temporally diagnostic. Although the occupation of Llano was brief, detailed information on the production dates for materials are crucial*

for the interpretation of the issues relating to community planning and the colony's metalworking industry. Other materials may be very closely dated and these items can help reconstruct the sequencing of colony development.

7. *Public Involvement and Interpretation: The data recovery that will be undertaken for the public benefit to recover information that would otherwise be lost as a result of project impacts to the Llano del Rio Colony site. The results from the field investigation would be interpreted to public and professional audiences in a technical report, public report and possibly a museum exhibit.*

8. *Personnel and Schedule: The historical and archaeological work will be conducted under the direct supervision of professional/s who meet the Secretary of the Interior qualifications in the appropriate disciples.*

Based upon the above considerations, there is no feasible and prudent alternative to the use of land from the Llano del Rio Colony and the proposed action includes all possible planning to minimize the harm to the Llano del Rio Colony resulting from such use.

5.7 Other Properties Evaluated Relative to the Requirements of Section 4(f)

The purpose of this discussion is to address section 4(f) requirements relative to other park, recreational facilities, and historical properties within approximately one-half mile (0.8 km) of the study area. Due to the remote/rural location of the Llano del Rio Colony site and Shady Bend Park there are no other 4(f) properties within one-half mile (0.8-km) of any of the project alternatives.

5.8 Section 6(f)

The Land and Water Conservation Fund Act lets State and local governments obtain grants to acquire or make improvements to parks and recreation areas. Section 6(f) of this Act prohibits the conversion of property acquired or developed with these grants to a nonrecreational purpose without the approval of the Department of the Interior's (DOI) National Park Service. Both the Llano del Rio Colony Site and the proposed Shady Bend Park have not received grants from the Land and Water Conservation Fund Act therefore there is no use of Section 6(f) land.

5.9 Coordination

A 30-day scoping period was allocated to ensure that all concerns were presented to the department for consideration and inclusion in the environmental studies. A scoping meeting was held on August 26, 1998 to address any initial concerns prior to design and development of the project. Members of the Big Pines Historical Society expressed concerns about the project effects on the Llano site. An additional meeting was held with members of the Big Pines and West Antelope Valley historical societies on July 15, 1999 to discuss project effects on the colony and ways those impacts might be reduced.

Members of both groups were concerned about proximity effects on the Llano Hotel ruin, one of the most visible and significant surviving built elements. Instead of encroaching on this ruin, these interested parties suggested expanding the highway exclusively on the south side of the existing alignment and installing fencing along the north side of the highway to limit access to the ruin. Design Variation A was initially proposed in response to these suggestions and Design Variations B and C were later developed to move the expanded highway even farther away from the hotel.

Caltrans cultural resources experts also had personal and telephone contacts with individuals knowledgeable about the Llano Colony and heard similar concerns from those parties. Personal contacts were made with Felice Apodaca, Ralph Bowman, Jasper Kidd, and other members of the Big Pines Historical Society, as well as Milt Stark, Cora and James McCrumb, Jim Pledger, David Earle, and Dana Hicks of the Western Antelope Valley Historical Society. Dr. Robert Hine, a historian who has written extensively about western utopian communities including the Llano cooperative, was also contacted by email and expressed his wish that the colony be mapped and recorded to ensure project effects are adequately considered. Caltrans in coordination with FHWA and SHPO have had ongoing coordination and review of proposed treatment plans over the course of this project. Caltrans, SHPO and FHWA have had correspondence on the Llano del Rio Colony on the following dates:

- March 20, 2000
- April 21, 2000
- June 22, 2000
- August 18, 2000
- December 12, 2000
- January 16, 2001

In a letter sent on April 21, 2000, the Office of Historic Preservation determined that the Llano del Rio Colony is eligible for the National Register of Historic Properties under Criterion A and D. There is not sufficient evidence at this time to support the eligibility in the areas of economic practices and social behavior. Significance under Criterion A and D is sufficient to establish Llano del Rio as a historic property for the purposes of Section 106 consultation.

Public views on the proposed project have also been sought through numerous additional meetings, telephone conversations, and email exchanges with interested parties.

General public meetings were held on June 10, September 8, and December 15, 1999 with the Highway 138 Safety Corridor Task Force and another general public meeting took place March 9, 2000 in connection with a Littlerock Town Council Meeting. Those venues produced no specific comments about the treatment of the Llano Del Rio Colony site or Shady Bend Park.

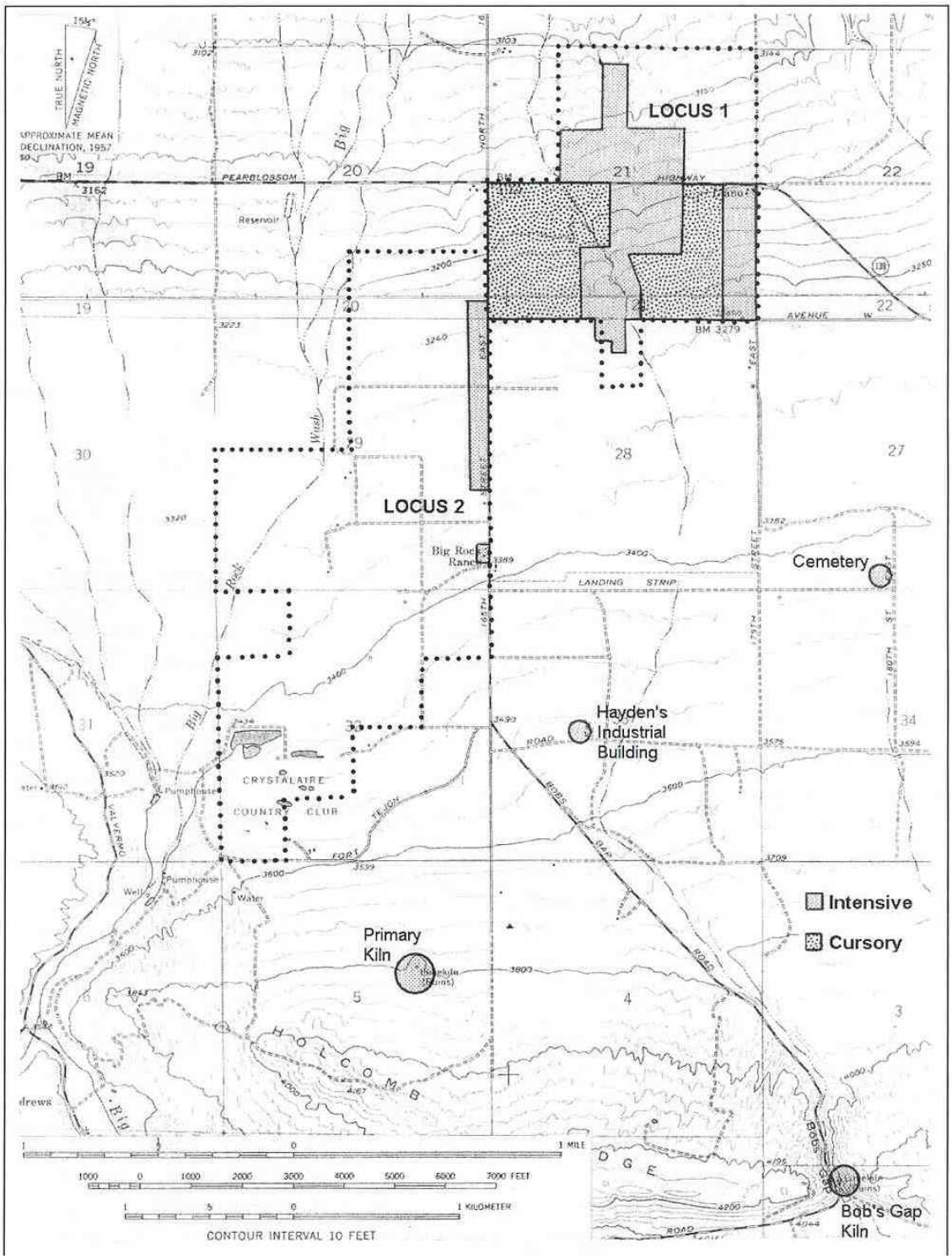


FIGURE 19 BOUNDARIES OF THE LLANO DEL RIO COLONY (BLACK DOTS)

6.0 Consultation and Coordination

6.1 Early Scoping Process

The CEQA requires a formal scoping process when an Environmental Impact Report is prepared. A 30-day scoping period was allocated to ensure that all concerns were presented to the department for consideration and inclusion in the environmental studies. At the start of the project there was a scoping meeting on August 26, 1998 to address any initial concerns prior to design and development of the project from concerned residents and business owners.

Scoping letters were mailed on July 28, 1998 to the appropriate local, state, and federal agencies, elected officials and over 3000 local homeowners and residents notifying them of the formal initiation of studies. A Notice of Intent was published in the Federal Register on August 27,1998 and the Notice of Preparation was dated August 20, 1998 and sent by certified mail to the responsible agencies{ XE "Responsible Agencies" }. The public notices (Appendix C) were published in the following newspapers.

Los Angeles Times-San Fernando Edition on August 12, 1998 and August 19, 1998

Antelope Valley Press on August 12, 1998 and August 19, 1998

La Voz on August 14, 1998

Acton Agua Dulce Weekly on August 17, 1998 and August 24, 1998

The comments of potentially affected agencies, businesses{ XE "Businesses" }, and the public on pertinent social, economic, and environmental issues were required by September 30, 1998. The majority of the comments dealt with safety issues, primarily speeding violations and the difficulty involved in making turns or passing safely. There were requests for consideration of trail crossings for hikers and equestrians. Littlerock residents expressed some opposition to the project.

6.2 Consultation

Consultation and coordinationby Caltrans Districts 7 with the following agencies and jurisdictions has occurred throughout the project.

- US Fish & Wildlife Service
- Natural Resources Conservation Service (Lancaster Office)
- Department of Interior (DOI)
- State Office of Historic Preservation (OHP)
- California Department of Fish and Game (CDFG)
- Littlerock Town Council
- City of Lancaster
- Llano Community Association
- City of Palmdale
- Los Angeles County Department of Parks and Recreation
- California Department of Water Resources
- Los Angeles County Department of Power and Water
- State Assemblyman George Runner
- CHP Southern Division, Victorville, Antelope Valley Area, San Bernardino
- Los Angeles County Sheriff's Department (Lancaster)
- Keppel Union SchoolDistrict
- Pearblossom Chamber of Commerce
- Littlerock Chamber of Commerce
- Route 138 Safety Task Force

It is Caltrans policy to avoid where feasible, cultural resources that are of value to contemporary Native Americans. In doing so Caltrans has been in consultation with the Tribal Office of the San Manuel Band of Serrano Mission Indians throughout the course of the technical studies for this highway widening project. Caltrans has also been in consultation with the Native American Heritage Commission and Andy Green a Kawaiisu tribal representative. A letter sent on behalf of the San Manuel Band of Serrano Mission Indians from the Law Offices of Thomas E. Luebben requested that an intensive and comprehensive cultural resource inventory be conducted in the planning stages of the project. Consultation with other individuals who are knowledgeable about the cultural resources within the Project's region were contacted including the State Archivist in Sacramento, Sutro Librarians in San Francisco, and historians Delores Hayden and Robert Hine. Based on the technical studies that have been completed for this project it appears that no Native American cultural resources have been identified within the project area.

6.3 Community and Agency Meetings

During project development there have been meetings with various groups to ensure that all possible concerns have been addressed. As mentioned in Section 2.7 there was a Highway 138 Safety Corridor Task Force formed in order to implement changes while design and development were in the works. The meetings for the Highway 138 Safety Corridor Task Force were held on:

- September 25, 1998
- November 19, 1998
- January 28, 1999
- March 11, 1999
- June 10, 1999
- September 8, 1999
- December 15, 1999
- March 15, 2000

Besides meetings of the 138 corridor task force their was a town council meeting in Littlerock on March 9, 2000 and a Cultural meeting concerning the archaeological site in Llano on July 15, 1999. A major concern during project development and design has been the impact of Caltrans right-of-way on Alpine Elementary school in Littlerock and the impacts on the faculty and visitor parking and the impact to the bus loading/unloading zone.

The meetings with Keppel Union School{ XE "School" } District were held on:

- August 10,1999
- November 5, 1999
- December 3, 1999
- January 7, 2000
- February 4, 2000

Caltrans has also conducted workshops with the following organizations:

- Pearblossom Chamber of Commerce on June 1, 2000
- Littlerock Town Council on June 22, 2000
- Littlerock Chamber of Commerce on July 19, 2000
- City of Palmdale on August 9, 2000
- Littlerock Town Council Fall Festival on October 7, 2000
- Llano Association on October 24, 2000

6.4 Circulation of Draft Environmental Document

This document was circulated to the agencies and individuals shown on the mailing list in Appendix D. Notices of the document's availability were sent to all property owners (approximately 2000) in the corridor. Copies of the document were available at the local libraries and local post offices in Appendix C. A Public Hearing was held during the circulation{ XE "Circulation" } of this Draft Environmental Impact Report/Environmental Assessment (EIR/EA). The Public Hearing was held on October 30, 2000 at Littlerock High School. Notice of the Public Hearing was published in six local newspapers servicing the surrounding communities in English and Spanish. Also the Draft Environmental Impact Report/Environmental Assessment was available at the following site:

http://www.dot.ca.gov/dist07/route138/index.htm

A record of the public hearing is available under separate cover. Appendix J contains the public comments and responses for this project.

7.0 List of Preparers

EIR/EA prepared by:

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Carlos J. Montez	Environmental Planner	Document Preparation
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Leann Williams	Senior Transportation{ XE "Transportation" } Planner	Air Quality{ XE "Air Quality" } Conformity Study
Claudia, Harbert	Architectural Historian	Historical Property Survey Report
Thad M. Van Buren	Associate Archeologist	Archaeological Survey Report
Gary Iverson	Senior Environmental Planner	Archaeological Survey Report
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Linda Taira	Senior Transportation{ XE "Transportation" } Planner	Natural Environment Study
Karen Drewe	Natural Science Specialist	Natural Environment Study
Lorna Foster	Assoc. Right of Way Agent	Draft Relocation{ XE "Relocation" } Impact Report
Sami Deeb	Utilities{ XE "Utilities" } Engineer	Utilities{ XE "Utilities" } Relocation{ XE "Relocation" } Study Report
Yung Chung	Civil Engineer	Geotechnical Report
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Consultants:

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Phillip Richards Professional Services Industries Inc.	Environmental Professional	Initial Site Assessment

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